

U.S. Department of the Interior
Bureau of Land Management

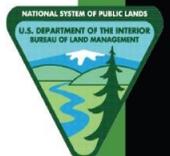
Environmental Assessment

Crown Castle – Small Cell Network Project

NEPA #: DOI-BLM-NV-S020-2020-0005-EA

Case File #: N-95127

PREPARING OFFICE
U.S. Department of the Interior
Bureau of Land Management
Southern Nevada District - Red Rock/Sloan Field Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130



----- *This page intentionally left blank* -----

Table of Contents

- 1.0 INTRODUCTION 1
 - 1.1 Identifying Information 1
 - 1.1.1 Title, Environmental Assessment Number, and Type of Proposed Project 1
 - 1.1.2 Location of Proposed Project..... 1
 - 1.1.3 Name and Location of Preparing Office 3
 - 1.1.4 Case File Number 3
 - 1.1.5 Applicant Name..... 3
 - 1.2 Purpose and Need for Action..... 3
 - 1.2.1 Introduction 3
 - 1.2.2 Purpose and Need 4
 - 1.3 Decision to be Made..... 4
 - 1.4 Scoping, Public Involvement and Issues 4
- 2.0 PROPOSED ACTION AND ALTERNATIVES 6
 - 2.1 Proposed Action..... 6
 - 2.1.1 Ground Disturbance..... 7
 - 2.1.2 Right-of-way Requirements 8
 - 2.1.2.1 Staging Areas 8
 - 2.1.3 Fiber Optic Conduit, Cable, and Electrical Wire Construction 9
 - 2.1.3.1 Fiber-Optic Cable (Aerial)..... 9
 - 2.1.3.2 Installation of Underground Conduit and Cables..... 9
 - 2.1.3.3 Horizontal Directional Bore Construction 9
 - 2.1.3.4 Trenching Construction 10
 - 2.1.3.5 Installation of Cable into Conduit..... 11
 - 2.1.3.6 Installation of Access Vaults 11
 - 2.1.3.7 Splicing of Cable Ends at Access Points 12
 - 2.1.3.8 Pole, Node, and Equipment Cabinet Installation Construction..... 12
 - 2.1.3.9 Utility Pole Installation..... 12
 - 2.1.3.10 Attachment of Antennae, Associated Equipment, and Fiber-Optic Cable to Poles 13
 - 2.1.3.11 Antennae and Associated Equipment on Node Poles 13
 - 2.1.4 Construction Workforce and Equipment..... 14
 - 2.1.5 Vegetation Trimming and Trampling..... 15
 - 2.1.6 Construction Schedule..... 15
 - 2.1.7 Operations, Maintenance, and Repair..... 16
 - 2.1.8 Design Features of the Proposed Action..... 17
 - 2.1.8.1 Air Quality/Dust Control 17
 - 2.1.8.2 Forestry 18
 - 2.1.8.3 Fuels/Fire Management 18
 - 2.1.8.4 Human Health and Safety 18
 - 2.1.8.5 Invasive Species/Non-Native Weeds 18
 - 2.1.8.6 Lands and Realty 20
 - 2.1.8.7 Migratory Birds 20
 - 2.1.8.8 Noise 21
 - 2.1.8.9 Paleontological Resources 21
 - 2.1.8.10 Pre-Construction Environmental Training 22
 - 2.1.8.11 Soils 22
 - 2.1.8.12 Threatened, Endangered and Special Status Species 22
 - 2.1.8.13 Traffic Control and Safety 25
 - 2.1.8.14 Vegetation..... 25
 - 2.1.8.15 Visual Resources 25

2.1.8.16 Waste (Solid and Hazardous)..... 26

2.1.8.17 Water Quality..... 26

2.1.8.18 Water Quality/Erosion Control..... 27

2.1.8.19 Additional Best Management Practices During Proposed Project Activities 27

2.1.8.20 Wild Horses and Burros..... 28

2.2 Description of Alternatives Analyzed in Detail 29

2.2.1 No Action Alternative 29

2.2.2 Alternatives Considered but not Analyzed 29

2.3 Conformance 29

2.3.1 Red Rock Canyon National Conservation Area Resource Management Plan..... 29

2.3.1.1 Developed MEA Zone Description..... 30

2.3.1.2 Roaded Developed MEA Zone Description 30

2.3.1.3 Roaded Natural MEA Zone Description..... 31

2.3.1.4 Utility Rights of Way (ROW) Exclusion and Avoidance 31

2.3.2 Federal Regulations 32

2.3.3 Multiple Species Habitat Conservation Plan 32

2.3.4 City of Las Vegas Regulations 32

3.0 AFFECTED ENVIRONMENT 33

3.1 Fish and Wildlife (Excluding Federally Listed Species)..... 41

3.1.1 Methods 41

3.1.2 Existing Conditions 41

3.1.3 Game Species 41

3.2 Fuels/Fire Management..... 42

3.3 Human Health and Safety..... 42

3.4 Invasive Species/Noxious Weeds..... 43

3.5 Migratory Birds..... 45

3.5.1 Regulatory Background..... 45

3.5.1.1 Migratory Bird Treaty Act of 1918..... 45

3.5.1.2 Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds 45

3.5.1.3 Memorandum of Understanding to Promote the Conservation of Migratory Birds 45

3.5.2 Methods 45

3.5.3 Existing Conditions 46

3.6 National Conservation Lands 46

3.7 Paleontological Resources..... 47

3.8 Recreation..... 48

3.9 Soils..... 48

3.10 Threatened, Endangered and Special Status Animal and Plant Species 49

3.10.1 Regulatory Background..... 50

3.10.1.1 Endangered Species Act..... 50

3.10.1.2 BLM Manual 6840 — Special Status Species Management 50

3.10.1.3 Migratory Bird Treaty Act..... 51

3.10.2 Nevada Revised Statutes 51

3.10.3 Red Rock Canyon National Conservation Area RMP..... 51

3.10.4 Methods..... 52

3.10.5 Existing Conditions 53

3.10.6 Birds..... 53

3.10.7 Mammals..... 54

3.10.8 Reptiles..... 55

3.10.9 Plants..... 55

3.10.10 Other Sensitive Biological Resources 55

3.11 Travel/Transportation..... 56

3.11.1 State Route 159 56

3.11.2 Red Rock Canyon Scenic Drive..... 56

3.11.3 Las Vegas Transportation Network..... 56

3.12 Vegetation 57

3.12.1 Methods..... 57

3.12.2 Existing Conditions..... 57

3.12.2.1 Creosote Bush Scrub..... 57

3.12.2.2 Desert Wash..... 58

3.12.2.3 Ruderal/Disturbed..... 58

3.13 Visual Resources 59

3.13.1 BLM Visual Resource Management 59

3.13.2 Visual Characteristics of the Proposed Project Area..... 59

3.14 Water Resources (Surface/Ground)..... 60

3.14.1 Regional Overview..... 60

3.14.2 Groundwater..... 60

3.14.3 Surface Water..... 61

4.0 ENVIRONMENTAL EFFECTS 0

4.1 Fish and Wildlife (Excluding Federally Listed Species)..... 0

4.1.1 Proposed Action 0

4.1.2 No Action Alternative 0

4.2 Fuels/Fire Management..... 1

4.2.1 Proposed Action 1

4.2.2 No Action Alternative 1

4.3 Human Health and Safety..... 1

4.3.1 Proposed Action 1

4.3.2 No Action Alternative 2

4.4 Invasive Species/Noxious Weeds..... 2

4.4.1 Proposed Action 2

4.4.1 No Action Alternative 2

4.5 Migratory Birds..... 2

4.5.1 Proposed Action 2

4.5.2 No Action Alternative 3

4.6 National Conservation Lands 3

4.6.1 Proposed Action 3

4.6.2 No Action Alternative 3

4.7 Paleontological Resources..... 3

4.7.1 Proposed Action 3

4.7.2 No Action Alternative 4

4.8 Recreation..... 4

4.8.1 Proposed Action 4

4.8.2 No Action Alternative 4

4.9 Soils..... 4

4.9.1 Proposed Action 4

4.9.2 No Action Alternative 5

- 4.10 Threatened, Endangered and Special Status Animal and Plant Species..... 5
 - 4.10.1 Proposed Action 5
 - 4.10.2 No Action Alternative 6
- 4.11 Travel/Transportation 6
 - 4.11.1 Proposed Action 6
 - 4.11.2 No Action Alternative 7
- 4.12 Vegetation 7
 - 4.12.1 Proposed Action 7
 - 4.12.2 No Action Alternative 8
- 4.13 Visual Resources 8
 - 4.13.1 Proposed Action..... 8
 - 4.13.1.1 Utility Poles/Nodes 9
 - 4.13.1.2 Fiber-Optic Cable 11
 - 4.13.1.3..... 11
 - 4.13.1.4 Las Vegas Components 11
 - 4.13.2 No Action Alternative 11
- 4.14 Water Resources (Surface/Ground)..... 11
 - 4.14.1 Proposed Action 11
 - 4.14.2 No Action Alternative 12
- 4.15 Cumulative Impacts on Affected Resources..... 12
 - 4.15.1 Past and Present Actions..... 12
 - 4.15.2 Reasonably Foreseeable Future Actions 18
 - 4.15.3 Cumulative Impacts on Affected Resources..... 18
 - 4.15.3.1 Fish and Wildlife (Excluding Federally Listed Species) 19
 - 4.15.3.2 Fuels/Fire Management 19
 - 4.15.3.3 Human Health and Safety 19
 - 4.15.3.4 Invasive Species/Noxious Weeds 20
 - 4.15.3.5 Migratory Birds 20
 - 4.15.3.6 National Conservation Lands..... 20
 - 4.15.3.7 Paleontological Resources 21
 - 4.15.3.8 Recreation 21
 - 4.15.3.9 Soils 21
 - 4.15.3.10 Threatened, Endangered, Candidate, and Special-Status Animal and Plant Species 21
 - 4.15.3.11 Travel/Transportation 22
 - 4.15.3.12 Vegetation 22
 - 4.15.3.13 Visual Resources 23
 - 4.15.3.14 Water Resources 24
- 5.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED 27
 - 5.1 Consultation and Coordination 27
- 6.0 LIST OF PREPARERS..... 30
- 7.0 REFERENCES 32

List of Tables

Table 2.1. Temporary and Permanent Disturbance by Proposed Action Activities Within BLM Regulated Lands.....	7
Table 2.2. Utility Pole/Node Location and Characteristics	12
Table 2.3. Equipment Requirements and Crew Size of the Proposed Project	14
Table 3.1. Resources Considered in the Evaluation of the Proposed Action and Alternatives	33
Table 3.5. Soil Types Occurring in Proposed Project Area	49
Table 5.1. List of Tribal Outreach, Contact, and Consultation.....	27
Table 5.2. List of Persons, Agencies and Organizations Consulted	27
Table 6.1. List of Preparers.....	30
Table 6.2. Cooperating Agencies	30
Table 6.3. Third Party NEPA Consultant ID Team	30

List of Appendices

Appendix A – BLM Stipulations

Appendix B – Figures / Maps

Appendix C – Visual Simulations

Appendix D – Biological Report

Acronyms

BLM	Bureau of Land Management
CFR	Code of Federal Regulations
DOI	Department of Interior
EA	Environmental Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
GIS	Geographic Information Systems
MBTA	Migratory Bird Treaty Act
MEA	Management Emphasis Areas
MSHCP	Multiple Species Habitat Conservation Plan
MTP	Master Title Plat
NCA	National Conservation Area
NDOT	Nevada Department of Transportation
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NNHPD	Nevada Natural Heritage Program Database
NNHP	Nevada Natural Heritage Program
NRS	Nevada Revised Statutes
NRCS	Natural Resources Conservation Service
OSHA	Occupational Safety and Health Administration
PVC	Poly Vinyl Chloride
PNC	Potential Natural Community
PL	Public Law
RMP	Resource Management Plan
ROW	Right of Way
RRCNCA	Red Rock Canyon National Conservation Area
SCS	Small Cell Solution
SR	State Route
US	United States
USA	United States of America
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

----- *This page intentionally left blank* -----

1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental effects of the Proposed Action and Proposed Alternatives, which consists of constructing and installing a Small Cell Fiber Fed Communications (SCFFCS), also known as a Small Cell Network. Crown Castle has applied to Bureau of Land Management (BLM) for a Right-of-Way (ROW) in an area along SR 159 in Red Rock Canyon National Conservation Area (RRCNCA). This EA will assist the BLM Red Rock/Sloan Field Office in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any significant effects could result from the analyzed actions. Following the requirements of NEPA (40 CFR 1508.9 (a)), this EA describes the potential impacts of a No Action Alternative and the Proposed Action. If the BLM determines that the Proposed Action is not expected to have major effects, a Finding of No Significant Impact (FONSI) will be issued and a Decision Record will be prepared. If significant effects are anticipated, the BLM will prepare an Environmental Impact Statement or select the No Action Alternative.

1.1 Identifying Information

1.1.1 Title, Environmental Assessment Number, and Type of Proposed Project

Crown Castle –Small Cell Network Installation Proposed Project (N-95127)

Environmental Assessment Number: DOI-BLM-NV-S020-2020-0005-EA

1.1.2 Location of Proposed Project

Fifty-nine percent (59%) of the Proposed Action infrastructure would be placed within Bureau of Land Management (BLM) managed lands at the RRCNCA, 39 % would be placed within the regulatory boundaries of Clark County, and 2% would be placed within the regulatory boundaries of the City of Las Vegas. The Proposed Action route within BLM managed lands would occur along the shoulder of Nevada State Route (SR) 159 for 4.2 miles (installation of new conduit underground between mile markers 8.2 and 10.4, installation of fiber in existing CenturyLink conduit between mile markers 12.5 and 14.5, and installation of nodes), along the eastern shoulder of Moenkopi Road, and existing utility rights-of-way (ROWs). The Proposed Action route within Clark County boundaries would occur along the southern shoulder of SR 159 and existing utility ROWs. The Proposed Action route within the City of Las Vegas would occur along the northern shoulder of Park Vista Drive and Far Hills Avenue. Infrastructure construction would occur completely within existing public ROWs, existing transportation corridors, and existing utility corridors. The work taking place within the existing utility corridors would be installed via attachment to an existing utility pole line. Infrastructure work taking place within Clark County and the City of Las Vegas are considered connected actions to the Proposed Action within BLM managed lands. These Project components will work as part of a complete larger system providing communications coverage within the Project area. However, because these actions take place outside of the RRCNCA, they are not part of the permitting process for the Proposed Action, and as such, upon approval of

permits from the City of Las Vegas and Clark County, these Project components would be constructed in the absence of the Project components in the RRCNCA.

Maps are found in Appendix B. Figure 1, Proposed Project Vicinity, provides an overview of the Proposed Project vicinity. Figure 2, Proposed Project Location Map, provides the Proposed Project location. Figure 3, Jurisdictional Map of Regulatory Boundaries, provides an overview current land ownership within the Proposed Project area.

The Legal Description for the Proposed Action is as follows:

DESCRIPTIONS OF LAND REFORMATTED

LSR 2018-11 N-95127

Right-of-Way for Crown Castle International Corporation

Mount Diablo Meridian, Nevada

T. 21 S., R. 58 E.,

- sec. 12, E1/2NE1/4SE1/4SE1/4 and SE1/4SE1/4SE1/4;
- sec. 13, NE1/4NE1/4NE1/4NE1/4, W1/2NE1/4NE1/4NE1/4, NW1/4NE1/4NE1/4, S1/2NE1/4NW1/4NE1/4, E1/2SW1/4NW1/4NE1/4, SW1/4SW1/4NW1/4NE1/4, N1/2SE1/4NW1/4NE1/4, SW1/4SE1/4NW1/4NE1/4, NW1/4SW1/4NE1/4, W1/2SW1/4SW1/4NE1/4, E1/2NE1/4SE1/4NW1/4, SE1/4SE1/4NW1/4, NE1/4NE1/4SW1/4, S1/2NW1/4NE1/4SW1/4, SW1/4NE1/4SW1/4, S1/2SW1/4NW1/4SW1/4, and SE1/4NW1/4SW1/4;
- sec. 14, SE1/4SE1/4NE1/4SE1/4, E1/2SE1/4SW1/4SE1/4, SW1/4SE1/4SW1/4SE1/4, NE1/4SE1/4SE1/4, S1/2NW1/4SE1/4SE1/4, SW1/4SE1/4SE1/4, and NW1/4SE1/4SE1/4SE1/4;
- sec. 23, W1/2NE1/4NW1/4NE1/4, W1/2NW1/4NE1/4, W1/2NW1/4SW1/4NE1/4, E1/2NE1/4SE1/4NW1/4, and E1/2SE1/4SE1/4NW1/4.

T. 21 S., R. 59 E.,

- sec. 4, that portion of lot 3 lying within "Area F" as described in the Warranty Deed recorded on May 1, 2003 as Document Number 20030501:03087 in the official records of Clark County, Nevada, lots 4, 7 and 8, S1/2NE1/4SW1/4SW1/4, SW1/4SW1/4SW1/4, N1/2SE1/4SW1/4SW1/4, SW1/4SE1/4SW1/4SW1/4, NE1/4SE1/4SW1/4, S1/2NW1/4SE1/4SW1/4, and NW1/4SW1/4SE1/4SW1/4;
- sec. 5, lots 1 thru 4 and S1/2SE1/4SE1/4SE1/4;
- sec. 6, lots 13 and 14, lots 19 thru 21, and lot 26, and N1/2SW1/4NE1/4SW1/4;
- sec. 7, lots 3 and 4, NW1/4NE1/4NW1/4NE1/4, N1/2NW1/4NW1/4NE1/4, SW1/4NW1/4NW1/4NE1/4, SE1/4SE1/4NE1/4, SE1/4SW1/4SE1/4NE1/4, S1/2NE1/4NE1/4NW1/4, SW1/4NE1/4NW1/4, N1/2SE1/4NE1/4NW1/4, NW1/4SE1/4NW1/4, E1/2SW1/4SE1/4NW1/4, NW1/4SW1/4SE1/4NW1/4, NW1/4NE1/4SW1/4, NW1/4SW1/4NE1/4SW1/4, NE1/4SE1/4SW1/4, S1/2NW1/4SE1/4SW1/4, N1/2SW1/4SE1/4SW1/4, NW1/4NE1/4NE1/4SE1/4, NW1/4NE1/4SE1/4, NW1/4SW1/4NE1/4SE1/4, SE1/4NE1/4NW1/4SE1/4, S1/2SW1/4NW1/4SE1/4, SE1/4NW1/4SE1/4, and N1/2NW1/4SW1/4SE1/4;
- sec. 8, NE1/4NE1/4NE1/4, W1/2NE1/4NE1/4, NE1/4NW1/4NE1/4, NW1/4NW1/4NE1/4, N1/2SW1/4NW1/4NE1/4, E1/2SE1/4NW1/4NE1/4, E1/2NE1/4SW1/4NE1/4, E1/2SE1/4SW1/4NE1/4, W1/2SE1/4NE1/4, SE1/4NE1/4NE1/4NW1/4, S1/2NE1/4NW1/4, SE1/4NW1/4NW1/4, N1/2NE1/4SW1/4NW1/4,

SW1/4NE1/4SW1/4NW1/4, NW1/4SW1/4NW1/4, SW1/4SW1/4NW1/4,
N1/2NE1/4NE1/4SE1/4, and N1/2NW1/4NE1/4SE1/4.

The areas described aggregate 1022.33 acres, according to the official plats of the surveys of the said lands, on file with the BLM and Geographic Information System data.

1.1.3 Name and Location of Preparing Office

U.S. Bureau of Land Management
Southern Nevada District - Red Rock/Sloan Field Office
4701 North Torrey Pines Drive, Las Vegas, Nevada 89130

1.1.4 Case File Number

BLM Casefile No. N-95127

1.1.5 Applicant Name

Crown Castle. LLC.
2055 South Stearman Drive
Chandler, AZ 85286

1.2 Purpose and Need for Action

1.2.1 Introduction

As the Las Vegas Valley expands in population, so does the need for cellular service coverage. Where Nevada State Route (SR) 159 runs through Red Rock Canyon, there is cellular service along SR 159 in RRCNCA, but in a section between mile markers 8.2 and 14.5 the cellular service coverage is minimal or non-existent based on service carrier. This area is also near a rural residential community surrounded by public lands.

Crown Castle has applied to the Bureau of Land Management (BLM) for a ROW to construct a Small Cell Fiber Fed Communications System (SCFFCS), also referred to as a Small Cell Solution, in RRCNCA to provide continuous cellular coverage in the area which currently has little or no cellular coverage. The Proposed Project would consist of six (6) new utility poles, seven (7) antenna nodes attached to newly installed and existing utility poles, and installation of fiber-optic cable and supporting equipment to interconnect the system.

The Proposed Project would expand wireless voice and broadband services provided by Crown Castle to an unserved/underserved rural area along a heavily traveled section of SR 159 in Clark County, Nevada. This Proposed Project would:

- Improve the communications and data system connectivity in this area;
- Enhance public health and safety because of improved availability and reliability of communications access for emergency services personnel, who currently respond to various emergency calls in and around Red Rock Canyon on an hourly basis and on high visitation days, and do not possess reliable coverage when needed.

- Provide a means for efficient expansion of wireless service by other carriers in this area, through potential co-location or joint use of some or all of the proposed facilities.
- Expand and enhance Nevada's national and international telecommunications access by enabling more networks to exchange traffic across Nevada and by improving telecommunications reliability with high-quality, state-of-the-art technology.

Crown Castle's Proposed Project would be consistent with Nevada and federal telecommunications policies.

1.2.2 Purpose and Need

The purpose of the Proposed Action is to provide continuous cellular phone coverage in an area which currently has little or no cellular coverage within and adjacent to Red Rock Canyon. In accordance with the Federal Land Policy and Management Act (FLPMA) of 1976, public lands are to be managed for multiple uses in a manner that utilizes the land and their various uses in the combination that will best meet the present and future needs of the American people. The BLM is authorized to grant rights-of-ways (ROWs) on public lands for necessary transportation or other systems/facilities which are in the public interest and which require ROWs over, upon, under, or through such lands by Section 501(a)(7) of FLPMA. The Proposed Action would be for Crown Castle to construct an SCFFCS/Small Cell Solution and associated infrastructure on BLM managed public lands in RRCNCA, as described in Chapter 2 of this Environmental Assessment (EA).

The need for the Proposed Action is to respond to a FLPMA ROW request submitted by Crown Castle to construct, operate, and maintain a ROW on public lands managed by the BLM Red Rock/Sloan Canyon Field Office in compliance with FLPMA, BLM regulations, and other applicable Federal laws and policies.

1.3 Decision to be Made

The BLM will decide whether to deny the proposed right-of-way, grant the right-of way, or grant the right-of-way with modifications. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)). In the decision process, the BLM must consider how the BLM's resource management goals, objectives, opportunities, and/or conflicts relate to this non-federal use of public lands.

1.4 Scoping, Public Involvement and Issues

To determine the scope of environmental documentation and analysis required for this Project, there was internal scoping for the project between May 2016 through May 2020 through a series of BLM planning meetings, field studies, and plan reviews.

External public involvement was initiated with two public project forums that were held on August 27 and 28, 2019 at the Summerlin Public Library and provided opportunities to introduce the proposed project to the public, agencies, and stakeholders.

The following issues identified through the scoping process provided direction for the project planning, design, and environmental mitigation:

Issues:

- What are the effects on wildlife and birds, biodiversity, and areas with sensitive resources such as unique plant community types and individual species, wetland and riparian habitats, wilderness areas, raptor nesting sites, and wildlife corridors?
- What are the potential impacts on special status species, particularly with respect to nesting sites, hibernation sites, breeding and foraging areas?
- What are the potential effects on fire management in the Project Area?
- How will the introduction of invasive plants to the Project Area be minimized?
- What are the potential effects of the Project on national conservation lands in the RRCNCA?
- What would be the effects on the visual environment/viewshed with implementation of the project, both short-term and long-term?
- What is the effect on paleontological resources?

Affected Resources identified:

- Fish and Wildlife (Excluding Federally Listed Species)
- Fuels/Fire Management
- Invasive Species/Noxious Weeds
- Migratory Birds
- National Conservation Lands
- Paleontology
- Threatened, Endangered and Special Status Animal and Plant Species
- Vegetation
- Visual Resources

Chapter 3, Table 3-1, lists Resources Considered in the Evaluation of the Proposed Action and Alternatives and the rationale for determination, including the above identified affected resources evaluated further in this site-specific EA.

Additional public involvement will occur online on the BLM NEPA Register website that will include the draft EA and power point presentation to supplement the information explained in the draft EA. These will be available for public review and comment. The public and interested parties will be notified of this review via announcements and media releases, and the website will include guidance on how to provide substantive comments.

2.0 PROPOSED ACTION AND ALTERNATIVES

A description of the Proposed Action is described below. Figure 2, Proposed Project Location Map (provided in Appendix B) gives an overview of the location of the Proposed Project components.

2.1 Proposed Action

The Proposed Action is presented by Crown Castle and would consist of the installation of six (6) new utility poles, seven (7) antenna nodes attached to newly installed and existing utility poles, and installation of fiber-optic cable and supporting equipment to interconnect the system. If approved by BLM, the Proposed Action would be constructed after approval and issuance of permits and authorizations by the BLM. The Proposed Action can be constructed during any season of the year provided that Crown Castle fully implements the Project Design Features (minimization measures) described in Section 2.1.8 of this EA, and fully complies with the BLM Mitigation Measures and BLM Stipulations in this EA and the Biological Opinion.

Fifty nine (59%) of the Proposed Action infrastructure would be placed within BLM managed lands at the RRCNCA, 39 % would be placed within the regulatory boundaries of Clark County, and 2% would be placed within the regulatory boundaries of the City of Las Vegas. The Proposed Action route within BLM managed lands would occur along the shoulder of SR 159 for 4.2 miles (installation of new conduit underground between mile markers 8.2 and 10.4, and installation of fiber in existing BLM-owned conduit between mile markers 12.5 and 14.5), Moenkopi Road, and existing utility ROWs. The Proposed Action route within Clark County boundaries would occur along the shoulder of SR 159 and existing utility ROWs. The Proposed Action route within the City of Las Vegas would occur along the shoulder of Park Vista Drive and Far Hills Avenue. Infrastructure construction would occur completely within existing public ROWs, existing transportation corridors, and existing utility corridors. The Proposed Action is further described below.

The Proposed Action consists of the following two (2) project components with associated elements, including connected actions:

1. Fiber-optic cable/electric installation by trenching:
 - Installation of new underground 4-inch Poly Vinyl Chloride (PVC) conduit;
 - Underground installation of fiber-optic cable into existing and newly installed conduit;
 - Installation of new fiber-optic cable on an existing power pole line;
 - Underground connection of network to one newly installed fiber-optic hub station;
 - Installation of pull boxes and hand holes; and
 - Splicing of fiber-optic cable into facilities.
2. Installation of the node poles and equipment cabinets:
 - Installation by of six (6) new steel utility poles (Nodes 1, 2, 4, 5, 6, and 7);
 - Installation of seven SCS nodes containing three (3) antennae inside a concealment canister installed on the top of the six (6) new steel utility poles and one existing wooden utility pole (Node 3);
 - Installation of fiber-optic equipment (i.e., optical conversion equipment, signal regeneration

equipment, switching equipment, etc.) within above-ground equipment pedestals or underground equipment vault boxes at each node location.

The following sections discuss these Project components, anticipated ground disturbance, right-of-way requirements, construction, and operation and maintenance. Project Mitigation Measures can be found in The Crown Castle proposed Project Design Features described in the Description of the Proposed Action.

2.1.1 Ground Disturbance

Ground disturbance due to Proposed Action implementation would occur as a result of two different Proposed Action activities: 1) fiber-optic cable/electric installation by trenching and Aerial Methods, and 2) installation of the node poles and equipment cabinets. The disturbance area is summarized in Table 2.1, Temporary and Permanent Disturbance by Proposed Project Component, and further described below.

Table 2.1. Temporary and Permanent Disturbance by Proposed Action Activities Within BLM Regulated Lands

Proposed Project Component	Temporary Disturbance in Previously/Currently Disturbed Areas (acres)	Permanent Disturbance in New Undisturbed Areas (acres)	Total Disturbance by Proposed Project Component (acres)
Cable and Electric Installation	1.274 (1.251 acres BLM/0.023 acres Non-BLM)	0	1.274 (1.251 acres BLM/0.023 acres Non-BLM)
Node Pole and Equipment Cabinets	0.077 (all BLM)	0.003 (all BLM)	0.080 (all BLM)
Total Disturbance	1.351 (1.328 BLM/ 0.023 Non-BLM)	0.003 (all BLM)	1.354 (1.331 BLM/ 0.023 Non-BLM)

To estimate disturbance during cable and electric installation, Crown Castle included all areas where trenching would be used to install cable and electric lines. Trenching activities would be approximately 37,000 feet in length and would disturb an area 1.5 feet-wide for a total 55,500 square feet or 1.274 acres. This would be a temporary disturbance and would take place in both previously and recently disturbed road shoulders (NDOT and Clark County ROWs within BLM regulated lands).

During node/pole and equipment cabinet installation activities, an approximate 500 square-foot area

would be disturbed per node, for a total of 3,500 square feet or 0.080 acres of disturbance for the seven (7) proposed nodes. Of this, 140 square feet (0.003 acre) of the disturbance would be permanent and 3,360 square feet (0.077 acres) would be temporary. These disturbances would occur within native habitat (creosote bush scrub).

Total ground disturbance for the entire Proposed Project would be 1.354 acres, of which 0.080 acres would occur in tortoise habitat. Total temporary disturbance would be 1.351 acres, and permanent disturbance would be 0.003 acres.

Engineering drawings of Proposed Project components are found in Appendix C. The public road ROW in which the majority of the underground portions of the Proposed Project would be constructed is relatively flat as it follows SR 159. Off road sections of the Proposed Project alignment are more topographically diverse. No staging areas would be required during project construction. All equipment and supplies would be brought to the project work areas on a daily basis, and would be removed at the end of each workday. Work areas would be in pre-disturbed areas except in the case of node installation locations. Work areas near roadways and utility ROWs would use the entire ROW where available, with the exception of undisturbed habitat, which wouldn't be utilized.

All mineral materials that would be severed during any process throughout this project (i.e. horizontal directional bore construction or trenching construction) would be used within the ROW. Should there be excess mineral materials from this project they would be stockpiled on site for disposal by the BLM. If mineral materials are to be stockpiled on site for a future disposal, specific BLM use authorization in the form of a contract, free use permit or material site right-of-way would be acquired before the stockpiled mineral materials can be removed from the ROW.

These area calculations are related to actual ground disturbance. Vehicle maneuvering would be within the disturbance areas described previously.

2.1.2 Right-of-way Requirements

The Proposed Project would utilize existing road or utility ROWs for construction activities and site access. SR 159 would provide the main access route to the Project Action area. No work would occur outside of existing access routes or utility corridors. Crown Castle would negotiate and develop agreements with the owners of these existing road and utility ROWs to place their project components. The existing ROWs are of sufficient width to accommodate the construction activities. Access to the ROWs would be by way of existing roads (private, City of Las Vegas, Clark County, NDOT, and BLM). Crown Castle would contact private, City of Las Vegas, Clark County, NDOT, and BLM land and ROW holders prior to construction to obtain any approvals or permits required to work in these areas.

2.1.2.1 Staging Areas

Staging areas are not expected to be necessary during Project Action implementation. Contractors would use their existing offsite equipment yards for their equipment and transport the equipment and materials needed for the Proposed Project to the site daily. Equipment and construction

supplies would be parked within the daily work area. In the rare event equipment is needed to be left overnight at a work site, or a pit or trench is required to be left open, equipment would be stored in a manner consistent with current safety measures as described by NDOT, and pits/trenches would be fenced in a manner approved by NDOT. Trenches would also have escape ramps placed at a distance no greater than every 0.25 miles. Any tortoise found in a trench or excavation would be promptly removed by an authorized desert tortoise biologist in accordance with the most current Service-approved guidance.

Crown Castle would submit a Traffic Control and Safety Plan to NDOT for approval prior to construction activities.

2.1.3 Fiber Optic Conduit, Cable, and Electrical Wire Construction

2.1.3.1 Fiber-Optic Cable (Aerial)

Crown Castle would use standard aerial construction techniques for the placement of the fiber-optic cable that is industry and OSHA compliant. Aerial construction on the existing utility pole line would be similar throughout the Proposed Action Area site. The cable would be over-lashed to existing wires where possible, or to new supporting wires installed by Crown Castle, using stainless steel lashers and wire clamps. The cable would be grounded at the first, last, and every fifth pole by driving a copper rod approximately 6 feet long and 1 inch in diameter into the ground. Aerial cable would be installed on an existing transmission line north of SR 159 and west of the City of Las Vegas on the RRCNCA and within private property within the Calico Basin area (see Figure 1 Vicinity Map and Figure 2 Project Location Map in Appendix B).

2.1.3.2 Installation of Underground Conduit and Cables

The underground conduit would be installed using standard utility horizontal directional boring or trenching. Each scenario is described below. For ground disturbance calculations and impact analysis, trenching was assumed since it results in more ground disturbance.

2.1.3.3 Horizontal Directional Bore Construction

Horizontal directional boring allows new conduits to be installed to the desired depth without surface disturbance along the alignment. It is expected that all of the new buried conduits would be installed using horizontal directional drilling methods. Bore entry and exit pits measuring approximately 2 feet by 6 feet and 3 to 5 feet deep would be excavated by a backhoe. These bore pits would be covered up overnight when boring is not being conducted. Horizontal directional bores machine would drill a horizontal pilot hole along the designed cable alignment and at a depth of 3 to 5 feet below the ground surface. Once the pilot bore string reaches its receiving pit, the conduit would be attached to the end. The pilot pipe would then be pulled back to the bore machine thereby installing the conduit. Separate sections of conduit would be connected together. Access vaults would be installed at regular intervals at either end of the bores. The typical bore lengths would be approximately 200 to 400 feet in length.

Small areas of disturbance measuring approximately 20 by 40 feet would be needed at

approximately 200- to 400-foot intervals to accommodate the bore machines, allow for the conduits to be connected and for the installation of access vaults. The excavation would be 2 feet by 6 feet, as described above, but some surface disturbance beyond that would be expected from the vehicle maneuvering and workers.

The bore machine would use a mixture of water and a fine clay (usually bentonite) to help lubricate the pilot pipe and keep the hole drilled open. The water and clay are mixed on site in a mixer attached to or as part of the bore machine. Earth cuttings from the borehole and the water/clay mixture returns to the bore entry pit (which is not lined) where it is pumped into a receiving tank. The mixture is filtered for reuse if possible or stored in a tank until it can be discarded in a local landfill approved to receive the material. The boring system is not closed along the proposed bore path. The potential exists that boring fluids seeking areas of lower pressure could find fissures in the ground surface and eventually make their way to the ground surface. Pressure in the bore system would be monitored during the entire operation. If pressure drops, the system would be shut down temporary to determine where leakage is occurring. Two (2) solutions to the problem are normally utilized: change the boring fluid mixture to a thicker formula or pull back the drilling stem and bore a new pathway. Measures to contain and cleanup a “frac-out” event are listed in The Crown Castle proposed Project Design Features described in the Description of the Proposed Action.

The design centerline is under or just off of the road shoulder. It would not be necessary to close any traffic lanes on SR 159 for the installation of buried conduit. The road shoulder would need to be closed for the work area during the hours of work. Traffic control for the road shoulder closure would be implemented. Flaggers would be used to direct traffic in the construction zone anywhere that construction is taking place within a roadway or associated ROW. Delays to motorists could typically average 1 to 2 minutes. Crown Castle would prepare a Traffic Control Plan prior to Proposed Action installation and would seek input and approval from NDOT for the plan

2.1.3.4 Trenching Construction

Trenching is a more invasive method and involves using a backhoe or excavator to excavate a linear trench in which the fiber-optic conduit and facilities are placed. The trench would be typically 12 inches wide and 30 to 60 inches deep (depending on underground utilities encountered). Conduit burial depth may vary or be increased because of permit requirements, existing utilities, or other conditions that warrant additional depth to protect the system. Trenches would be excavated with a rubber-tired backhoe. Because of their maneuverability, rubber-tired backhoes are well suited to areas where utility crossings are expected.

Conduit placement would begin immediately following trench excavation. Where existing utilities are encountered, a minimum clearance of 12 inches would be maintained between the utility and the conduit. Generally, when existing utilities are encountered, the new facilities would be placed below the utilities so as not to interfere with their future maintenance.

No more than approximately 1,000 feet of trench would normally be exposed at any time by a crew during construction. All trenches would be backfilled before the end of each day’s work, with the exception of excavations created for manholes. Any pit or hole left open overnight would be plated, signed and fenced according to local requirements and/or Occupational Safety and Health Administration (OSHA) specifications. Manholes would be placed along the shoulders of SR 159,

Moenkopi Road, Sky Vista Drive, Park Vista Drive, Carriage Hill Drive, Far Hills Avenue, and along an existing utility ROW within the RRCNCA.

The estimated disturbance in BLM, Clark County, Nevada State, and City of Las Vegas roadways would be due primarily to temporary side-cast materials. The actual trench width would be approximately 12 to 18 inches wide. For the purposes of this discussion, the side-cast materials are included in the width of disturbance. Sidecast trenching materials would be backfilled back into the trench in the same day in which it was excavated. In the event it is left overnight, it would be placed in the shoulder of the roadway at a safe distance from the travelled lanes of the road at a distance required by Nevada Department of Transportation, Clark County, or City of Las Vegas regulations, and would be identified by cones, flagging, and other required safety measures.

In order to cross the ephemeral wash between Nodes 4 and 5, Crown Castle would trench 36 inches (three [3] feet) below grade, install conduit, cover the conduit with a 12 inch cement cap, and then backfill up to grade. This work would be instream and would require regulatory permits to complete.

2.1.3.5 Installation of Cable into Conduit

Once the conduit system is installed, the fiber-optic cable would be pulled or blown into the conduits. The installation would be accomplished using a series of hydraulic pullers consisting of a main-line puller and sufficient intermediate assist pullers to ensure smooth pulling within specified tension restrictions. First, the pull line would be attached to a plug that is pushed through the conduit by air pressure. When the plug emerges at the end of the conduit section or access point, the pull line would be attached to the cable through a swivel to prevent the cable from twisting during the pulling operation. Then the pull line would be pulled back through the conduit section, threading the cable through the conduit. The main-line puller would be equipped with a tension limiter and a tension monitor to provide an accurate record of actual pulling tensions encountered. These methods would be used to pull the cable from one hand hole to the next. It is sometimes necessary to excavate temporary assist points to facilitate cable installation. In such cases, an excavation approximately 2 feet wide, 3 feet long, and 3 feet deep is dug to provide access to the conduit; this excavation is backfilled once the cable is installed. Crown Castle does not anticipate that any trenching materials would be left after backfilling trenches. However, if any materials are left after backfilling activities, they would be disposed of offsite at an approved disposal facility.

Crown Castle would perform site cleanup and surface restoration promptly following conduit and cable installation. Cleanup would include removing debris and restoring original surface conditions and contours. Any disturbed areas would be returned to their original or better condition. Revegetation of disturbed areas would be conducted where impacts are temporary in nature, including native habitats.

2.1.3.6 Installation of Access Vaults

To allow for cable-placing assist locations, cable splice locations, and future access to the buried conduits and fiber, buried access vaults (i.e., hand holes) would be placed along the route. These are described below. Once installation is complete, the hand holes would be accessed only rarely for

maintenance or cable replacement. Each hand hole would typically house 80 to 100 feet of cable slack.

Each hand hole would be equipped with a traffic-rated lid, even if it would be out of the path of traffic. The lid may be visible at the surface or may be buried just below the surface. Hand holes are sized to accommodate pulling fiber through conduits and would be 2 feet by 3 feet. Generally, road shoulders or other easily accessible areas are the preferred locations for hand holes. A hand hole would be necessary at the beginning and end points and approximately 4 to 6 intermediate hand holes would be placed along the alignment. Intermediate hand holes would be placed at intervals of approximately 300 to 500 feet. These hand holes would be installed as the final step in the horizontal directional drill process and installed into the same excavations that would be created as drill entry and exit points. No additional ground disturbance would be required for the hand holes.

Vault boxes would be located in areas where public access would be possible. However, the lids on these vault boxes would be secured with a built-in lock so that they could only be opened by Crown Castle personnel. The vault boxes would not have any vents on their tops or lids.

2.1.3.7 Splicing of Cable Ends at Access Points

Splicing of sections of fiber-optic cable at access points would be conducted consistent with Crown Castle specifications regarding equipment, personnel training, procedures, and testing. Appropriate lengths of excess (slack loop) fiber-optic cable, generally at least 30 feet, would be left at all splice locations to allow for cable expansion and contraction due to temperature and for any splicing required in the future. The cable would be spliced in splice cases (i.e., protective encasements) in a cable, with sufficient slack allowed. The splices would be made with a profile alignment fusion-splicing machine and protected by heat-shrink tubing.

2.1.3.8 Pole, Node, and Equipment Cabinet Installation Construction

The construction methods proposed for the Proposed Project are typical to telecommunications installations and would include methods to attach new fiber-optic cable to existing power transmission poles as well as new buried conduit facility.

2.1.3.9 Utility Pole Installation

Six (6) new steel utility poles, also referred to as nodes, would be installed as part of the Proposed Project. One existing wooden utility pole (Node 3) would also be used as part of the Proposed Project. Table 2.2, Utility Pole Characteristics, describes the size, type and location of each of the poles.

Table 2.2. Utility Pole/Node Location and Characteristics

Pole/Node Number ⁽¹⁾⁽²⁾	Location	Type (Existing/New)	Height	Material
1	State Route (SR) 159	New	30 feet	Metal

Pole/Node Number ⁽¹⁾⁽²⁾	Location	Type (Existing/New)	Height	Material
2	Moenkopi Road/Fire Department Access Road	New	30 feet	Metal
3	0.6 miles northeast of RRCNCA Visitor Center	Existing	29 feet	Wood
4	Red Rock Visitor Center Road/ Scenic Loop Drive	New	30 feet	Metal
5	SR 159/ Fossil Canyon Trailhead Parking near Cowboy Trail Rides	New	30 feet	Metal
6	SR 159 at the Red Rock Canyon Overlook Parking Area	New	30 feet	Metal
7	SR 159, south of Scenic Loop Drive and the Lower Red Rock Parking Area	New	30 feet	Metal

Table Notes:

(1) Pole locations are shown on Figure 2, Proposed Project Location Map (see Appendix B).

(2) Visual simulations of proposed poles are provided in Appendix E.

Additional Pole Features – All poles/nodes except # 3 would have an antenna concealment shroud and separate equipment cabinet in faux rock concealment shroud. Pole/Node # 6 would also have a streetlight to replace an existing one. Pole/Node # 3 would have an intermediate antenna mount and pole-mounted equipment cabinet.

The new utility poles would be placed within the shoulders of roadways well outside of the travelled lanes in accordance with the requirements of NDOT and other applicable regulatory agency safety rules to avoid any conflict with personal or commercial vehicles.

2.1.3.10 Attachment of Antennae, Associated Equipment, and Fiber-Optic Cable to Poles

Antennae, associated equipment, and fiber-optic cable would be installed on existing and new poles as well as underground using the following construction techniques.

2.1.3.11 Antennae and Associated Equipment on Node Poles

The following components would be attached to each of the seven node poles.

- Antenna(e) would be mounted at the top of each node pole.
- Battery back-up unit would be mounted on each node pole.
- Electric meter would be mounted on each node pole or on the ground surface.

Crown Castle would use standard aerial construction techniques (that are industry and OSHA compliant) and typical two-axle rubber-tire vehicles to attach antennae and associated equipment to

utility poles. Basic equipment required for aerial installations includes bucket trucks and cable reel trucks or cable trailers. At least one crew and one bucket truck would travel the Proposed Project alignment. The cable reel truck would carry spooled fiber that would be unwound for installation on existing poles and in newly installed and existing underground conduit. The two-axle truck equipment is highly maneuverable and would use existing improved areas for turning around or parking in areas such as existing roads, field access aprons, driveway aprons, or other roads. The Proposed Action Proponent would be responsible for ensuring that all Proposed Project-related vehicles and equipment arriving at the site do not transport noxious weeds onto the Proposed Project site. Crown Castle would ensure that all such vehicles and equipment that would be traveling off constructed and maintained roads within the Proposed Project area have been power washed, including the undercarriage, since their last off-road use and before off-road use on the Proposed Project. When beginning off-road use on the Proposed Project, such vehicles and equipment would not harbor soil, mud or plant parts from another locale. Depending on the site setting such as remoteness, or other site condition, the operator may be required to have an onsite wash area identified and readily available.

It would not be necessary to close any traffic lanes on the SR 159 for installation of antennae and associated equipment on node poles. Some road shoulders would need to be closed. For the smaller county roads and city streets, road closure could involve one traffic lane, but not the entire road. At least one lane of traffic would remain open and accessible at all times.

2.1.4 Construction Workforce and Equipment

Table 2.3, Equipment Requirements and Crew Size of the Proposed Project lists the typical construction equipment that would be needed for the various construction activities and the estimated maximum hours of operation. These estimates are based on the following quantities and assumed average production rates:

- Buried vault and node installation: approximately 30 vaults and six (6) Nodes to place, with one crew averaging two (2) vaults and one (1) node per day for 15 days.
- Cable placement:
 - Aerial: approximately 4.957 miles (26,172 linear feet) to place, with one crew averaging 1,600 feet per day for 17 days.
 - Buried (into conduit): approximately 7.398 miles (39,060 linear feet) to place, with one crew averaging 2,000 feet per day for 20 days.

Table 2.3. Equipment Requirements and Crew Size of the Proposed Project

Activity/Equipment Type	Equipment Requirements			Crew Size
	Default Horsepower	Hours per Day of Operation (Average)	Total Days	
Trenching crew				5
Trenching machine	121	10	37	
Backhoe	105	8	37	
Generator	50	6	37	
1-ton supply truck	200	6	37	

Activity/Equipment Type	Equipment Requirements			Crew Size
	Default Horsepower	Hours per Day of Operation (Average)	Total Days	
Buried vault and node crew				5
Backhoe	105	8	15	
Crane	300	6	15	
Bucket truck	200	8	15	
Cable installation crew: conduit				5
Cable truck	200	10	20	
Compressor	50	8	20	
Generator	50	8	20	
Backhoe	105	8	20	
1-ton supply truck	200	6	20	
Cable installation crew: aerial				4
Bucket truck	200	10	17	
1-ton supply truck	200	6	17	

2.1.5 Vegetation Trimming and Trampling

In locations requiring ground disturbance (pole installation, underground installation of conduit, and installation of other underground equipment) it would be necessary to trim or remove vegetation to install the Proposed Action components. In some locations, rubber-tired vehicles would be expected to trample existing vegetation, whereas in others, vegetation would be completely removed due to the installation of underground components of the Proposed Action. These impacts have been incorporated into the disturbance calculations presented in this EA. Equipment used on the project would be cleaned of mud and plant seeds prior to transportation to the Proposed Action Area to ensure that no invasive and non-native plant species are introduced to the Proposed Action Area.

Proposed Action activities would be designed to avoid impacts to both cacti and yucca plants. Project components and activities would be adjusted slightly to avoid these plants. At the time of biological studies for the Proposed Project, no cacti or yucca were identified in areas to be disturbed by Proposed Action activities. Pre-construction surveys would be conducted prior to construction activities to determine if any movements are necessary.

2.1.6 Construction Schedule

The construction process is expected to take approximately 8 weeks to complete. Construction of different project components at the same time allow Project activities to be completed in a shorter time period than if each activity were completed one at a time. For example, trenching, and buried vault and Node construction crews would be able to work on their specific tasks at the same time, thus completing work in less time. In addition, underground and aerial placement of fiber-optic cable would be achieved simultaneously, thus reducing the overall time needed to complete the project. If each activity were to be completed in a linear style, it would take more than 11 weeks to

complete the project.

Crown Castle would construct the Proposed Project between 7:00 a.m. and 6:00 p.m. on weekdays only during daylight hours. If the project were to occur during winter months when daylight hours are reduced, construction activity work times would be reduced to these shortened daylight time periods. Crown Castle would comply with any work timeframe restrictions that Nevada Department of Transportation (NDOT), BLM, Clark County, the City of Las Vegas, and private landowners may propose. Crown Castle would limit construction activities during periods of high visitation or high traffic (i.e., during fee free days on BLM lands and during holidays and special events). The work could take place during any season of the year but work would not be conducted during substantial rain events.

2.1.7 Operations, Maintenance, and Repair

Operations, maintenance, and repair activities associated with a fiber-optic Proposed Project are minimal. These activities would be carried out by Crown Castle, whose personnel would periodically (typically annually) patrol the Proposed Project route to inspect facilities. A maintenance crew would conduct quarterly inspections of the installed system to determine if any components of the system are in need of repair or replacement. The need to repair the aerial cable is not common and would include such activities as reattaching a loose or detached cable from a pole or to repair or replace electronic equipment at a node pole. If operations, maintenance, or repair activities are necessary for the aerial cable, they would include the use of standard two-axle rubber-tired bucket trucks with outriggers. For most situations an individual maintenance person would be able to complete the repairs.

It is highly unlikely that the buried conduit would require repair. However, if it does, it would require a backhoe crew to expose a hand hole or a collapsed section of conduit so the repair could take place. A crew consisting of 3 to 4 workers, a backhoe, and a utility truck could be expected to complete the repair. Repairs would take place within areas previously disturbed during the original installation process, and would be completed in one (1) to two (2) days. Repairs would follow the stipulations and minimization measures described in Section 2.1.8 of this EA, and fully complies with the BLM Mitigation Measures and BLM Stipulations in this EA and the Biological Opinion.

Repainting and repair of nodes, poles, and other associated equipment would also be conducted on an as needed basis. Crown Castle would use paint that is designed for utility poles and streetlights exposed to the sun in the Southwestern United States. If an event arises in between scheduled inspections (i.e. in the event of graffiti) or a call to Crown Castle's Network Operations Center, a field technician in the area would be alerted to remediate the problem. The Network Operations Center phone number would be posted on equipment at each location along with the site ID. Any reported damage would be assessed by Crown Castle. **Crown Castle would notify BLM and NDOT to determine steps for required repairs and coordinate completion of these steps.**

Crown Castle has signed a contract with its customer to operate the proposed system for a minimum period of 10 years. The project, however, would likely be used for a longer period. At this point, the project would be operated for 10 years, and then Crown Castle's customer would either enter into a new contract or would not. Upgrades of the system are more likely over time than a complete

replacement of the entire system.

Crown Castle would contact the appropriate resource agencies (for example, BLM, NDOT, Clark County, City of Las Vegas) to ensure environmental compliance is followed before and during any operations, maintenance, and repairs.

2.1.8 Design Features of the Proposed Action

Design Features are those specific means, measures or practices in the Proposed Action to reduce, avoid or eliminate adverse effects. Standard operating procedures, stipulations, and best management practices are usually considered Design Features.

Crown Castle proposes to implement the following Project Design Features as minimization measures to help avoid environmental impacts. Additionally, Crown Castle would follow the mitigation measures identified in Chapter 4, the BLM Stipulations listed in Appendix A of this EA.

2.1.8.1 Air Quality/Dust Control

To minimize fugitive dust and air quality impacts, the following measures would be implemented by the Crown Castle:

- Crown Castle would obtain a dust control permit through the Clark County Department of Air Quality (DAQ) for all construction and/or soil disturbing activity of 0.25 acres or greater, in the aggregate and ensure stipulations are in compliance for the duration of the project.
- Water trucks would be used to keep the construction-related dust to a minimum.
- Covering of stockpiles.
- All grading and excavation activities shall cease during periods of sustained wind events. These events are defined as wind exceeding 20 mph for a duration aggregating more than 3 minutes in any 60-minute period. A sustained wind event would be measured by monitoring the most proximate National Weather Service monitoring station or by using a kestrel wind meter or similar device. In the event that operations are shut down as a control method during a high wind event, watering of the area would continue if appropriate to minimize fugitive dust from crossing the property line. Wind speeds would continue to be monitored and construction activities would resume when wind speeds fall below the 20 mph 3-minute aggregate period in any 60- minute period and when visible dust emissions can be adequately controlled.
- The speed limit of 15 mph for construction vehicles would be implemented on unpaved “field roads”, within the right-of-way and in construction yards. Crown Castle would implement the Proposed Project speed limit by posting speed limit signs and the speed limit would be discussed in the tailboard meetings and presented in the Proposed Project’s Safety and Environmental Awareness Program. Construction activities may also be slowed down (e.g. reducing the speeds of grading equipment) to reduce fugitive dust emissions.
- Dust abatement techniques would be applied to earthmoving, excavating, trenching, and grading activities (such as watering, requiring loader buckets to be emptied slowly, minimizing drop heights, etc.).
- Workers would minimize equipment and vehicle idling times during construction activities.
- Vanpooling of employees would be encouraged.

2.1.8.2 Forestry

- Crown Castle would adjust the boundaries of ground disturbance at these disturbance areas to avoid impacting yucca and cacti species.

2.1.8.3 Fuels/Fire Management

- All construction and operating equipment would be equipped with applicable exhaust spark arresters.
- Personnel would be trained in fire prevention and initial response, and fire extinguishers would be available at each drill site.
- Water that is used for construction and operations would be available for plant fire suppression.
- Personnel would be allowed to smoke only in designated areas and would be required to follow applicable BLM regulations regarding smoking.
- The wooden pole at Node 3 would be treated with fire resistant materials to reduce the flammability of the wooden pole. The project proponent would clear combustible vegetation at the base of the pole on an annual basis. If the area is already devoid of vegetation or barren, this condition would be maintained.
- Compliance with fire restrictions is mandatory while fire restrictions are in effect (43 CFR 9212). Fire restrictions are generally enacted May through October. Fire restriction orders are available for review at BLM district offices and on the BLM website.
- The use of standard fire prevention measures should be practiced at all times (43 CFR 2805.12). Conditions that support wildfires can occur any time of the year in Southern Nevada.
- The project proponent shall immediately report fires to 911 or (702) 631-2350 and make all accommodations to allow immediate safe entry of firefighting apparatus and personnel.
- An Origin and Cause Investigation would be carried out on any human caused fire by BLM law enforcement or their designated representative. To minimize disturbance of potential evidence located at the fire scene, Crown Castle shall properly handle and preserve evidence in coordination with the BLM. The BLM shall pursue cost recovery for all costs and damages incurred from human-caused fires on BLM lands when the responsible party(s) has been identified and evidence of legal liability or intent exists. Legal liability includes, but is not limited to, negligence and strict liability (including statutory and contractual liability), products liability, etc.

2.1.8.4 Human Health and Safety

- The Proposed Action would comply with OSHA regulations and regulatory standards, thus minimizing risks to human health and safety during construction and operations.

2.1.8.5 Invasive Species/Non-Native Weeds

- A Weed Management Plan would be implemented by Crown Castle to control the spread of noxious weeds throughout construction and reclamation. The Weed Management Plan must be approved by the BLM Weed Management Specialist before construction. The Plan has been prepared and submitted to BLM. Additional measures to control the spread of noxious weeds

are listed below.

- Crown Castle would limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed. Crown Castle would avoid creating soil conditions that promote weed germination and establishment.
- Crown Castle would coordinate Proposed Project activities with the BLM Weed coordinator (702-515-5000) regarding any proposed herbicide treatment. If herbicide treatment is needed, Crown Castle would prepare, submit, obtain, and maintain a pesticide use proposal for the Proposed Action.
- Crown Castle would begin Proposed Project operations in weed-free areas whenever feasible before operating in weed-infested areas.
- Crown Castle would locate pits and staging areas for the use of equipment storage, machine and vehicle parking, or any other area needed for the temporary placement of people, machinery, and supplies. These staging areas would be selected from locations that are relatively weed-free. Crown Castle would avoid or minimize all types of travel through weed-infested areas or restrict major activities to periods of time when the spread of seed or plant parts are least likely.
- Equipment-cleaning sites would be located outside of BLM managed public lands. Proposed Project-related equipment and machinery (this especially includes the nooks and crannies of undercarriages) would be cleaned of all mud, dirt, and plant parts before moving into relatively weed-free areas and when leaving weed infested sites. Seeds and plant parts need to be collected, bagged, and deposited in landfills through the waste disposal system when practical.
- Crown Castle and its employees would inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and equipment.
- Crown Castle would use weed-free seed for reclamation; other organic products for erosion control, stabilization, or re-vegetation (such as straw bales, organic mulch) must be certified weed-free.
- Crown Castle is responsible for ensuring that all Proposed Project-related vehicles and equipment arriving at the site (including drill rigs, dozers, support vehicles, pickups, and passenger vehicles, including those of the operator, any contractor, or subcontractor and invited visitors) do not transport noxious weeds onto the Proposed Project site. Crown Castle would ensure that all such vehicles and equipment that would be traveling off constructed and maintained roads within the Proposed Project area have been power washed, including the undercarriage, since their last off-road use and before off-road use on the Proposed Project. When beginning off-road use on the Proposed Project, such vehicles and equipment would not harbor soil, mud or plant parts from another locale. Depending on the site setting such as remoteness, or other site condition, the operator may be required to have an onsite wash area identified and readily available. If a noxious weed infestation is known or later discovered on the Proposed Project site, Proposed Project-related vehicles or equipment that have traveled through such an infestation would be power washed, including the undercarriage, before leaving the site, at an established, identified wash area. Wash water and sediment would be contained in an adjacent settling basin. Should any vegetation emerge in the wash area or settling basin, it would be promptly identified and appropriately controlled if found to be an undesirable invasive plant.
- Crown Castle would prepare a Weed Control Plan and submit it for BLM Weed Specialist's approval prior to the start of any construction activities. The plan would require BLM approval prior to the beginning of any construction activities.

- Existing weed infestations would be treated prior to disturbance, and treatment methods and herbicides used would be discussed prior to treatment.
- Herbicides would be applied per label instructions and per the approved Weed Control Plan.
- Personnel applying herbicides would use personal protective equipment while spraying or handling herbicides.
- Herbicide application operations would be suspended when wind speed exceeds 6 miles per hour or when precipitation is imminent.
- Some treatment areas could be signed, if needed, indicating the herbicide used and the date of treatment. Areas which that are isolated and/or receive very little use by human beings would not be signed.
- During herbicide treatments, a pre-application sweep of the area would be completed (i.e., looking for nesting birds). Any areas that become infested with weeds during construction would be mapped and treated.

2.1.8.6 **Lands and Realty**

- Crown Castle shall contact right-of-way holders for location of underground utilities.
- Crown Castle would coordinate with the owner of any fences intersected by Proposed Project components and would arrange for the temporary removal of sections of fences for construction access, and for the reinstallation of fences and gates, as needed, to provide access for construction activities. Any modifications to existing fences would be done only with prior agreement from the affected fence owner and would be paid for by Crown Castle.

2.1.8.7 **Migratory Birds**

- Pre-construction nesting avian surveys shall be conducted for nesting special-status avian species (phainopepla, western burrowing owls, and migratory song birds) in the Proposed Project site and buffer areas. Pre-construction surveys would occur prior to the implementation of the Proposed Project during the appropriate survey periods for each species (between March 1st and August 31st). Surveys would follow required state and federal protocols where applicable. A qualified biologist would survey suitable habitat for the presence of these species. Surveys must be conducted a maximum of three (3) days prior to disturbance and are valid for only three (3) days. If three (3) days from the time of the survey pass, the area must be surveyed again.
- If a special-status bird species is observed and is suspected or known to be nesting, a buffer area would be established around the nesting site to avoid impacts on the nesting site. If no nesting special-status avian species are found, Proposed Project activities may proceed and no further mitigation measures would be required. If active nesting sites are found, the following exclusion buffers would be established, and no Proposed Project activities would occur within these buffer zones until young birds have fledged:
 - Phainopepla - Phainopepla typically nests and rears young from February through June. In order to avoid and minimize impacts on nesting phainopepla, a 250-foot buffer would be established around active nests. No Proposed Project-related activities would be allowed to occur within this buffer until young have fledged or the species is no longer attempting to nest. The buffer area can be removed prior to June if a qualified biologist determines that all juveniles have fledged from occupied nests.
 - Western Burrowing Owl - Western burrowing owl typically nests and rears young from

February through August. Burrowing owls also occupy nesting sites during the non-breeding season (September through January). If an occupied burrow is identified within 160 feet of the Proposed Project disturbance zone during the non-breeding season, or within 250 feet of the disturbance zone during the breeding season, Crown Castle would consult with the Nevada Department of Wildlife to determine the appropriate method to passively relocate owls. Proposed Project related activities would be allowed to proceed after owls are passively relocated. If passive relocation of owls is necessary, it shall occur outside of the nesting season.

- Migratory Songbirds - Migratory songbirds species typically nest and rear young from February through August. In order to avoid and minimize impacts on migratory bird species, a 250-foot buffer would be established around active nesting sites when construction activities would occur during their active nesting period. No Proposed Project-related activities would occur within this zone. The buffer area can be removed prior to August if a qualified biologist determines that all juveniles have fledged from occupied nests.

2.1.8.8 Noise

- Noise-attenuating barriers, baffles, or blankets shall be installed on equipment, where feasible in the vicinity of sensitive receptors to reduce noise levels.
- Construction would follow BLM's direction to comply with **Clark County noise ordinances** in the Proposed Project Area for specific work areas which would limit time of construction during morning and evening hours.
- Stationary construction equipment would be located as far as possible from noise-sensitive sites.
- Re-route construction-related truck traffic along roadways that would cause the least disturbance to residents.
- Use low-noise emission equipment.
- Implement noise-deadening measures for truck loading and operations.
- Monitor and maintain equipment to meet noise limits.
- Use acoustic enclosures, shields, or shrouds for equipment and facilities.
- Use high-grade engine exhaust silencers and engine-casing sound insulation.
- Minimize the use of generators to power equipment.
- Use moveable sound barriers at the source of the construction activity.

2.1.8.9 Paleontological Resources

- Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by Crown Castle, or any person working on his behalf on public or federal lands shall be immediately reported to the Authorized Officer. Crown Castle shall immediately suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. Crown Castle would make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. In some cases, this may delay activity at the site until the discovery may be recovered, or the project is modified to avoid impacting the find.
- An evaluation of the discovery would be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or paleontological values. Any decision regarding suitable mitigation measures would be made by the Authorized Officer after

consulting with Crown Castle. Crown Castle would be responsible for the cost of evaluation. Crown Castle shall be responsible for the resultant mitigation costs.

2.1.8.10 Pre-Construction Environmental Training

- A pre-construction environmental training would be conducted for all construction employees prior to the start of ground-disturbing activities and would cover the following:
- Inform the construction supervisor, workers, and inspectors of any potential sensitive resources that may occur along the Proposed Project route, to explain these resources' importance and sensitivity to disturbance, to review regulatory protections accorded to these resources, and to describe the construction protocols and mitigation measures adopted for the Proposed Project.
- Identify individual responsibilities and communication procedures regarding these resources.
- Address construction practices, traffic controls, and health and safety practices.

2.1.8.11 Soils

- Best Management Practices, including development of a Spill Prevention, Control, and Countermeasure plan, would be implemented to prevent the release of hazardous materials to the environment which could affect soil resources.
- Temporarily disturbed areas would be reseeded where previously vegetated using a BLM approved seed mixture.
- Erosion control measures, including but not limited to silt fencing, diversion ditches, water bars, temporary mulching and seeding, and application of gravel or rip rap, would be installed, where necessary, at the beginning of construction activities to avoid erosion and runoff.
- As a general rule, if vehicles or other Proposed Project equipment create ruts in excess of four inches deep when traveling over wet soils, the soil shall be deemed too wet for vehicle use.

2.1.8.12 Threatened, Endangered and Special Status Species

Environmental Awareness Training

- A qualified biologist shall conduct an employee environmental awareness training program for all construction personnel working on the Proposed Project. The training shall occur during Proposed Project implementation. The environmental training program shall include the occurrence and distribution of listed species and other sensitive resources in the Proposed Project area, measures being implemented to protect these sensitive resources during Proposed Project actions, and applicable definitions and prohibitions under state and federal Endangered Species Acts. Sign-in sheets shall be maintained to document that Proposed Project personnel have completed environmental training.

Pre-Construction Surveys

- Pre-construction surveys shall be conducted for special status plant, avian and bat species.

Special Status Plant Species

- A qualified botanist would conduct pre-construction field surveys to identify any populations of sensitive special-status plants located within proposed ground disturbance areas that occur within habitat. These surveys shall be conducted prior to the initiation of any construction activities and coincide with the appropriate flowering period of the special-status plant species with the potential to occur in the Proposed Project area. Pre-construction surveys would be conducted in conformance with the Integrated Vegetation Protocols for Pre-Project Surveys – Southern Nevada District Office and Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species. Crown Castle would consult with Crown Castle prior to conducting these surveys to ensure compliance with these survey protocol. If any special-status plant species populations are identified within or adjacent to the proposed disturbance area, Crown Castle would implement the following measures:
- If any population(s) of special-status plant species is identified directly adjacent to the Proposed Project site, a qualified biologist would clearly delineate the location of the plant population, and install protective fencing between the disturbance zone and the plant population to ensure that the plant population is adequately protected.
- If a special-status plant population is identified within the proposed disturbance zone, Crown Castle would consult with the Nevada Department of Wildlife, USFWS, and Bureau of Land Management (if species is affected on Bureau of Land Management lands) to determine the appropriate measures to avoid or mitigate for impacts to the species or population.
- Crown Castle would adjust the boundaries of the disturbance zone, where feasible, to avoid impacts to the plant species/population. Where avoidance is not feasible, Crown Castle would implement one or more of the following measures: (1) transplant potentially affected plants to areas not planned for disturbance. If a plant is transplanted, two more plants shall be planted. Plantings shall be managed and monitored by Crown Castle and shall survive to 5 years after planting; (2) seed or purchase plants and place them in an area adjacent to the disturbance zone; (3) purchase credits at an approved mitigation bank at a ratio approved by the Nevada Department of Wildlife, USFWS, Bureau of Land Management, and Crown Castle.

Migratory Bird Mitigation Measures

- In order to avoid potential impacts to breeding migratory birds from gather sites, a nest survey would be conducted by a biologist familiar with birds of the area, within potential breeding habitat prior to any surface disturbance proposed during the avian breeding season (February 15th through August 31st). Surveys must be conducted a maximum of three (3) days prior to disturbance and are valid for only 3 days. If 3 days from the time of the survey pass, the area must be surveyed again.
- All active nests are to be protected until the nest is either abandoned (due to the birds own will) or the nestlings fledged (fledge in this instance means to be no longer dependent on the nest). This includes active nests found outside the breeding season, as well as nests found after construction activities have begun.
- Protecting active nests involves establishing disturbance-free buffers within which activities are restricted. Buffer distances are determined by species biology, susceptibility to disturbance, and temperament. Example buffer distances for various species are listed in the BLM's Southern Nevada Nesting Bird Management Plan (2019) (Appendix X).

Special Status Bat Species

- Concurrent with breeding bird surveys, a qualified biologist would conduct pre-construction surveys for special-status bat species within suitable habitat in the Proposed Project site and buffer areas. If special status bat species are identified, the biologist shall evaluate whether breeding adults or juveniles are present.
- If present, a suitably sized buffer (150 feet) shall be placed around the roost if it appears that Proposed Project activities may cause abandonment, and Proposed Project activities may not commence until juvenile bats are self-sufficient and would not be directly impacted by Proposed Project activities.
- If Proposed Project activities would directly disturb or destroy a bat maternity site, the bat maternity site shall not be destroyed until juvenile bats are self-sufficient and would not be directly impacted by Proposed Project activities.
- If special-status bats are found, and the maternity site would be destroyed during development, an artificial maternity site shall be provided for the bats. The maternity site shall be constructed and placed on-site prior to removal of the original maternity site. Crown Castle shall consult with the appropriate state and federal resource agencies and obtain their approval prior to removing the original maternity site.
- A report documenting the replacement of the maternity site shall be prepared within one (1) month of completion of the artificial roost and shall be submitted to the appropriate resource agencies.

Desert Tortoise Protection

- In order to mitigate potential direct impacts to desert tortoises, the following measures shall be implemented to minimize the potential for “take” of tortoises during Proposed Project implementation. It should be noted that no desert tortoises or potential burrows for the species were observed during biological surveys:
 - A qualified biologist would conduct pre-construction surveys for desert tortoises prior to any ground disturbing activities in potential habitat for this species. Tortoise clearance surveys should be conducted at 15-foot intervals. It is recommended that two desert tortoise surveys without finding any tortoises or new tortoise sign be conducted prior to declaring the fenced construction sites free of tortoises. All burrows that could provide shelter for a desert tortoise should be excavated during the first clearance survey. If a tortoise is encountered while conducting a clearance survey or during burrow excavation the tortoise would not be handled but would be monitored from a distance to ensure its safety. The temporary tortoise-proof fencing would be removed, and no further construction would occur in the area until the tortoise has moved on its own out of the area.
 - All vehicular traffic related to the Proposed Project during construction activities shall occur only on existing roads unless temporary tortoise proof fencing is erected in these areas.
 - Site access should be limited to designated access roads so as to avoid “take” on unmonitored roads.
 - Proposed Project speed limits shall not exceed 15 mph during construction activities.
 - Temporary tortoise-proof fencing (1”x 2” mesh hardware cloth) shall be installed and maintained around areas of the Proposed Project site that occur within habitat prior to initiating construction and clearance surveys for desert tortoises in these areas. This fencing would prevent tortoises from wandering into these areas. Ongoing maintenance of the

fencing would be recommended with oversight by an authorized biologist. Fence installation should be monitored by a qualified tortoise biologist.

- All construction personnel should undergo desert tortoise awareness training.
- After the tortoise proof-fence is erected a qualified biologist(s) should remain onsite until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a bi-weekly basis throughout construction in order to maintain compliance with mitigation measures.
- A qualified biologist(s) should be onsite to survey for tortoises immediately in front of vegetation clearance activities in the event a tortoise was inadvertently missed during clearance surveys.
- A biologist shall remain on-call throughout construction in the event a tortoise wanders onto a construction site.
- A post-construction report detailing the implementation and success of the above protection measures shall be prepared and submitted to the Nevada Department of Wildlife and the USFWS within 90 days of completion of construction documenting any tortoise or tortoise sign encounters as well as measures taken.

2.1.8.13 **Traffic Control and Safety**

To minimize the potential for impacts related to Proposed Project construction on local traffic from the Proposed Action, the Crown Castle would implement the following measures:

- Preparation of a traffic control plan prior to Proposed Project construction
- Pre-construction training to address traffic controls.
- Implementation of traffic control measures in conformance with NDOT, BLM and City of Las Vegas specifications.
- If a lane of traffic needs to be blocked, flaggers would be used to direct traffic in the construction zones.

2.1.8.14 **Vegetation**

- A BLM-approved seed mixture shall be used to re-vegetate disturbed soils.
- Crown Castle would consult with BLM regarding the timing of reseeded, specific seed mixtures, and application rates to be used to improve the success of reseeded.
- Disturbed areas would be re-contoured to blend with the surrounding topography. Topsoil would be salvaged whenever possible and reused in a timely manner.
- Impacts on vegetation would be minimized by reseeded all disturbed areas not required for subsequent telecommunications uses with a weed-free and BLM-approved seed mixture.

2.1.8.15 **Visual Resources**

To minimize the potential for impacts on visual resources from the Proposed Action, Crown Castle would implement the following environmental protection measures:

- Steel poles would be painted a “color that matches other structures and the surrounding landscape. Typically use colors that blend with the background and do not visually overwhelm”

per NDOT requirements (Section 13.2 of NDOT Design Guideline Document). The NDOT Design Guidelines match the BLM Visual preferred colors. Wood poles would not require any color changes;

- Concealment shrouds would shield the antenna and would be painted a color that blends with the surrounding area;
- Equipment cabinets would be placed within a faux rock concealment shroud;
- Subsurface placement of fiber-optic cable to reduce visibility; and
- Co-location of aerial fiber-optic cable on existing utility poles to avoid placement of new poles.

2.1.8.16 Waste (Solid and Hazardous)

- Secondary containment structures would be provided for all chemical and petroleum/oil storage areas during drilling and construction operations. Additionally, absorbent pads or sheets would be placed under likely spill sources and spill kits would be maintained onsite during construction and drilling activities to provide prompt response to accidental leaks or spills of chemicals, drilling/boring fluids, and petroleum products.
- Solid wastes generated by the Proposed Action would be stored onsite until transported offsite to an appropriate landfill facility in accordance with BLM and Clark County regulations and all federal, state, and local regulations.
- A project hazardous material spill and disposal contingency plan would describe the methods for cleanup and abatement of any petroleum hydrocarbon or other hazardous materials spills. The hazardous material spill and disposal contingency plan would be submitted to and approved by the BLM and made readily available onsite before operations begin.
- Handling, storage, and disposal of hazardous materials, hazardous wastes, and solid wastes would be conducted in conformance with federal and state regulations to prevent soil, groundwater, or surface water contamination and associated adverse effects on the environment or worker health and safety.

2.1.8.17 Water Quality

- Development of a construction Storm water Pollution Prevention Plan and Spill Prevention, Control, and Countermeasures plan.
- Erosion-control measures would be implemented.
- Preserve existing vegetation where required and when feasible.
- Apply temporary erosion control measures to active and non-active areas as required to control soil loss. Reapply as necessary to maintain effectiveness.
- Implement temporary erosion control measures during predicted storm events.
- Stabilize non-active areas throughout any predicted storm events.
- Any natural drainage patterns that are impacted during construction of the Proposed Project would be returned to their original state.
- Upon completion of construction, permanent erosion control measures would be applied to all remaining disturbed areas.
- Sufficient quantities of temporary sediment control materials would be maintained on-site throughout the duration of the Proposed Project to protect the active disturbed soil areas prior to predicted rain events and for rapid response to failures or emergencies. The following

temporary sediment control BMPs would be used on this Proposed Project: silt fence, fiber rolls, sediment filtration devices, hydraulically applied dust/sediment control materials as needed, and sandbag barrier, or equivalent.

- During predicted storm events, temporary sediment controls would be implemented at the draining perimeter of disturbed soil areas and at the toe of slopes.
- A silt fence, or equivalent, would be installed along the perimeter areas adjacent to open drainage areas. All other exposed perimeter areas adjacent to roads would be protected with fiber rolls, as necessary.
- A stabilized construction entrance/exit would be constructed and maintained at construction site entrances and exists to ensure that sediment and other debris is not tracked from any portion of the Proposed Project onto paved roads.
- Obtain appropriate regulatory permits to conduct in stream/wash trenching activities between Nodes 4 and 5.

2.1.8.18 Water Quality/Erosion Control

To minimize erosion and impacts to water quality, the following measures would be implemented by Crown Castle:

- Erosion controls would be used where necessary along the Proposed Project route, including locations where construction activities occur near storm drains, streams, steep slopes, and other sensitive habitat areas.
- Erosion control measures that may be used include silt fencing, certified weed-free straw wattles and straw bales, and other control measures as necessary to ensure that sedimentation does not affect water quality.

2.1.8.19 Additional Best Management Practices During Proposed Project Activities

Crown Castle shall implement the following best management practices (BMPs) during Proposed Project implementation to minimize adverse effects to special-status wildlife species and sensitive habitats:

- Hazardous materials, fuels, lubricants, or solvents that are accidentally spilled during drilling activities should be cleaned up and disposed of immediately and according to applicable federal, state and local regulations.
- The speed of Proposed Project-related vehicular traffic should be limited to 15 miles per hour once vehicles have left paved roads and are traveling along unpaved dirt roads.
- All equipment storage during Proposed Project implementation should be confined to the Proposed Project site or to previously disturbed off site areas that are not habitat for sensitive species. Staging areas should be approved by a qualified biologist prior to use for staging activities.
- Sediment-control devices (e.g., weed-free straw wattles, silt fence, straw bales, etc.) should be installed around construction work zones to prevent runoff to adjacent wetlands and sensitive wildlife habitats not proposed for disturbance.
- To prevent entrapment of wildlife species during the implementation of the Proposed Project, all excavated, steep-walled holes and trenches in excess of 3 feet in depth should be provided with one or more escape ramps constructed of earthen fill or a wood/metal plank.

If wildlife proof barricade fencing is available, it should also be utilized where appropriate. Escape ramps should be at less than a 45-degree angle. Trenches and pits should be inspected for entrapped wildlife each working day before construction activities resume. Before such pits and trenches are filled, they should be thoroughly inspected for entrapped animals. If any wildlife species are discovered, they should be allowed to escape voluntarily, without harassment, before construction activities resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.

- All trash items such as wrappers, cans, bottles, and food scraps generated during Proposed Project implementation should be disposed of in closed containers only and regularly removed from the Proposed Project site. Food items may attract animals onto the Proposed Project site, consequently exposing such animals to increased risk of injury or mortality. No deliberate feeding of wildlife should be allowed.
- To prevent harassment, mortality, or unauthorized “take” of sensitive species and/or their habitat by domestic dogs and cats, no pets should be permitted on the Proposed Project site.
- Impacts associated with wildfires can be minimized by maintaining firefighting equipment on site during Proposed Project related activities. The use of shields, protective mats or use of other fire preventive methods during grinding and welding activities would prevent or minimize the potential for fire. Personnel should be trained regarding fire hazard for wildlife and their habitats.
- Any take (harming, harassment, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or any attempt to conduct the previous), injury or illness of sensitive wildlife species shall be reported promptly to the NNHP, Nevada Department of Wildlife, the Bureau of Land Management (if species is affected on BLM lands), and the USFWS. Proposed Project activities shall cease until Crown Castle consults with these agencies and these agencies determine that the Proposed Project may proceed without harming further sensitive wildlife species (this may include the implementation of additional protective and mitigation measures above and beyond those discussed in this biological assessment).

2.1.8.20 Wild Horses and Burros

To minimize impacts to wild horses and burros, the following measures would be implemented by Crown Castle:

- Construction zones during project construction would be physically separated by fencing from surrounding habitat areas during activities.
- During Construction, all access gates to RRCNCA must remain closed to keep wild horses and burros off of SR 159. If locks are installed, ensure that the Field Manager of Red Rock Canyon NCA, is provided a key or combination to the locks in the event of an emergency.
- Individual construction personnel would be informed to not disturb (that is, feed, pet, or chase) wild horses and burros if encountered on or near the Project area.
- If workers do see any wild horses and burros, they would be advised to keep a safe distance; they are wild animals and can be unpredictable, especially during foaling and breeding season.
- If areas of surface water or puddles are created during construction activities, they would be temporarily fenced off in order to keep wild horses and burros from drinking potentially contaminated water.
- Utility lines would either be placed aerially or subsurface and would not impede movement of

wild horses or burros.

2.2 Description of Alternatives Analyzed in Detail

NEPA requires that a reasonable range of alternatives to the Proposed Action be considered that could feasibly meet the objectives of the Proposed Action as defined in the purpose and need for the Proposed Project [40 CFR 1502.14(a)]. The range of alternatives required is governed by a "rule of reason" (i.e., only those feasible alternatives necessary to permit a reasoned choice need be considered). Reasonable alternatives are those that are practical or feasible based on technical and economic considerations [46 Federal Register 18026 (March 23, 1981), as amended; 51 Federal Register 15618 (April 25, 1986)].

Alternatives to the Proposed Action must be considered and assessed whenever there are unresolved conflicts involving alternative uses of available resources [BLM NEPA Handbook H-1790-1, page IV-3 (BLM 2008)].

2.2.1 No Action Alternative

Under the No Action Alternative, the ROW would not be granted and neither the communications facility nor the power line would be constructed. Current and Proposed Projected land uses would continue in this area. Cellular communication coverage would continue to be lacking along a heavily traveled section of SR 159 in Clark County, Nevada.

2.2.2 Alternatives Considered but not Analyzed

The primary objective for identifying alternatives was to reduce and minimize visual impacts within the Proposed Project area. Crown Castle considered deploying a system that would have utilized taller poles, but utilizing less poles to provide coverage. However, this alternative would have led to greater visual impacts to the viewshed in the Proposed Project area. Anything taller and placed outside of the targeted, roadway service area will not provide service through traditional macro cell towers. This project is a low-powered, fiber-fed small wireless network designed to improve coverage, capacity and public safety for those traveling along the roadway. Higher-powered equipment on taller poles and outside of the roadway area do not provide access to those traveling along the roadway and would interrupt the viewshed. Based on several design revisions between the BLM, Crown Castle and the wireless providers over the last several years, this design being considered accomplishes those objectives. Therefore, this alternative was not considered further in this analysis.

No other alternatives were considered.

2.3 Conformance

2.3.1 Red Rock Canyon National Conservation Area Resource Management Plan

Land Use Plan: Red Rock Canyon NCA Resource Management Plan	Date Approved: May 2005
--	-------------------------

The Proposed Action is in conformance with the Red Rock Canyon NCA Resource Management Plan (RMP), dated May 2005. The emphasis of the 2005 Red Rock Canyon NCA RMP is to protect unique habitats for threatened, endangered, and special-status species while providing areas for community growth, recreation, mineral exploration and development, and other resource uses. The specific objectives and management directions that allow for the actions proposed can be found in this RMP.

The RMP identifies Management Emphasis Areas (MEA) that help provide a framework for evaluating the appropriateness of an action. There are five MEA zones: Developed, Roaded Developed, Roaded Natural, Non-motorized, and Primitive.

Each MEA zone has a set of guidelines that describe the current setting and provides a standard for future management. The MEA descriptions do not make specific mention of utility infrastructure, however, per the RMP: “any actions or improvement must be consistent with what is normally expected in that particular setting so the visitor is provided a positive experience consistent with expectation” (page 29).

The areas where Proposed Project infrastructure is proposed falls within areas identified as Developed, Roaded Developed, Roaded Natural, and Utility/Rights-of-Way (ROW) Exclusion and Avoidance. These MEAs described as follows in the RMP (page 29 and 62):

2.3.1.1 Developed MEA Zone Description

- Substantial modification of natural environment
- Intensified motorized use and parking available
- Human interaction level moderate to high
- On site controls obvious and facilities widely available
- Law enforcement moderately visible

The following Proposed Project components would be within Developed MEA zones: portions of the aerial fiber-optic cable to be installed within the Calico Basin community.

2.3.1.2 Roaded Developed MEA Zone Description

- Recreation activities rely on and are consistent with the natural environment
- May include paved roads and buildings, but the design should blend with the natural environment
- Human interaction level moderate to high in more developed portions and low to moderate elsewhere
- On site controls, facilities and law enforcement noticeable

The following Proposed Project components would be within Roaded Developed MEA zones:

Nodes 2, 4 and 6, portions of the fiber-optic cable that would be aerially installed, and portions of the fiber-optic cable alignment that would be placed within new or existing subsurface conduit.

2.3.1.3 **Roaded Natural MEA Zone Description**

- Development limited to improved access and those consistent with the natural environment
- The recreational experience is based on the natural setting
- May include road, trails and camping areas
- Human interaction level is low to moderate, more often on the low wide
- On site controls present, but subtle
- Includes area with existing dirt roads

The following Proposed Project components would be within the Roaded Natural MEA zones: Nodes 1, 3, 5 and 7, portions of the fiber-optic cable that would be aerially installed, as well as portions of the fiber-optic cable alignment that would be placed within new or existing subsurface conduit.

2.3.1.4 **Utility Rights of Way (ROW) Exclusion and Avoidance**

Utility and transportation development are not normally compatible with the objectives of RRCNCA RMP (BLM 2005). Therefore, RRCNCA would be designated as a Right-Of-Way exclusion area. In rare cases, due to public land boundaries and private inholdings, rights-of-way may be permitted based on consideration of the following criteria:

- Type of and need for the proposed facility (local service to inholdings would receive priority consideration)
- Conflicts with other existing or potential resource values and uses, particularly visual resource impacts
- Availability of alternatives and/or mitigation measures

The Proposed Project would conform with the RMP. The Proposed Project has been designed to take advantage of existing infrastructure where possible and for the new improvements, they have been thoughtfully sited, designed, and camouflaged so as to minimize visual impacts and to ensure that visitors continue to be provided with a positive experience consistent with expectation. The visual analysis is more fully detailed in Chapter 3 and 4 of this document. The following measures would be followed to ensure that the project components do not impact visual resources and visitor's experiences:

- Steel poles would be painted a "color that matches other structures and the surrounding landscape. Typically use colors that blend with the background and do not visually overwhelm" per NDOT requirements (Section 13.2 of NDOT Design Guideline Document). The NDOT requirement coincide with the BLM VRM color scheme. Wood poles would not require any color changes;
- Concealment shrouds would shield the antenna and would be painted a color that blends with the surrounding area;
- Equipment cabinets would be placed within a faux rock concealment shroud;

- Subsurface placement of fiber-optic cable to reduce visibility; and
- Co-location of aerial fiber-optic cable on existing utility poles to avoid placement of new poles.

The project will provide communications service to areas of the Project area that traditionally have had poor communications service, including Calico Basin, local, state, and federal resource agencies and emergency personnel, Red Rock Campground, Bonnie Springs, and to recreational users of the RRCNCA.

2.3.2 Federal Regulations

The Proposed Action is in conformance with the following:

- Clean Air Act of 1970 (as amended in 1977 and 1990). 42 USC 7401 et seq. PL 91-604; 42-
USC 1857h-7 et seq.
- Clean Water Act of 1977 (as amended). 33 USC 1251-1387. PL 92-500.
- Endangered Species Act of 1973 (as amended). 16 USC 1531 et seq. PL 93-205.
- Executive Order 13112. 1999. Invasive Species. February 3.
- Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701 et seq.).
- Migratory Bird Treaty Act of 1918, as amended (16 USC 703 et seq.).
- National Environmental Policy Act of 1969 as amended. Public Law 91-190, 42 USC 4321-
4347, Public Law 94-52, July 3, 1975, Public Law 94-83, August 9, 1975, and Public Law 97-
258, § 4(b), Sept. 13, 1982.
- National Historic Preservation Act of 1966 as amended. 16 USC 470a et seq. 80 Stat. 915; PL
89-665
- Federal Noxious Weed Act of 1975. Public Law 93-629. 7 USC 2801 et seq.; 88 Stat. 2148.
January 3.
- Wild Free-Roaming Horses and Burros Act of 1971. PL 92-195

2.3.3 Multiple Species Habitat Conservation Plan

The Proposed Project is also within the Multiple Species Habitat Conservation Plan (MSHCP) area. The MSHCP plan area includes all of Clark County. In addition, specifically for the desert tortoise, the MSHCP plan area also includes NDOT ROW (including material sites) below 5,000 feet in elevation, south of the 38th parallel in Nye, Lincoln, Mineral, and Esmeralda Counties. The Proposed Project will be in compliance with the provisions of the MSHCP (Synthesis Planning, 2016).

2.3.4 City of Las Vegas Regulations

Portions of the Proposed Project are within the jurisdictional boundaries of the City of Las Vegas. The City of Las Vegas has a number of regulations governing construction activities within its jurisdictional boundaries. Crown Castle will conduct construction activities within the City of Las Vegas's jurisdiction in full compliance with the provisions of these existing regulations. These regulations are discussed as appropriate throughout this document.

3.0 AFFECTED ENVIRONMENT

To comply with the NEPA, the BLM is required to consider specific elements of the human environment that are subject to requirements specified in statute or regulation or by executive order.

Table 3.1, Supplemental Authorities, outlines the elements that must be considered in all environmental analyses. Table 3.2, Affected Resources, identifies additional resources deemed necessary for evaluation by the BLM and denotes if the Proposed Action or Alternative affects those elements. Tables 3.1 also summarizes (1) the environmental attributes that have been reviewed, (2) whether they would be affected by the Proposed Project, and (3) the rationale for that determination. Elements that are either not present, or are present but would not be affected, will not be discussed further. Resources that may be affected are analyzed in further detail in Chapters 3 and 4 of this document. Project mitigation measures are detailed in the Crown Castle proposed Project Design Features described in the Description of the Proposed Action to mitigate adverse impacts to resources.

Table 3.1. Resources Considered in the Evaluation of the Proposed Action and Alternatives

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
Air Quality / Greenhouse Gas / Climate Change	X		Air emissions from the Proposed Action would occur during both the construction and operation phases of the Proposed Project. However, during the construction phase, fugitive emissions are temporary in nature and impacts to air quality will be mitigated through permit stipulation and regulatory requirements including best management practices (BMPs). Emissions from operations will be minimal and BMPs will continue throughout the life cycle of the project. Site grading and travel on unpaved roadways would generate localized fugitive dust emissions and it is not anticipated to affect air quality. Exhaust from gas- and diesel-powered construction equipment and construction personnel vehicles would generate criteria pollutants and greenhouse gas

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
			emissions but are also localized and temporary. Currently, there are no emissions limits for suspected GHG emissions for this project, and no technically defensible method for predicting potential contributions to climate change during construction and operation of the Proposed Action. However, there are, and would continue to be, several efforts made to address GHG emissions from federal activities, including BLM authorized uses in future planning documents.
Areas of Critical Environmental Concern (ACECs)	X		None of the Proposed Project elements are located within an Area of Critical Environmental Concern on BLM managed lands. (USGS 2004 and BLM 2018f).
BLM Natural Areas	X		There are no Natural Areas in the Proposed Project area.
Cultural Resources	X		A Class III cultural resources inventory was completed for the Proposed Project. No historic properties are located within the direct or indirect Area of Potential Effects. A finding of No Historic Properties Affected was determined. (AEN 3/10/2020)
Environmental Justice	X		The Proposed Action will not adversely or disproportionately impact minority populations, low-income communities, or Native American Tribes. The Proposed Action would not have a disproportionately high or adverse effect that would place socioeconomic burdens

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
			<p>on the citizens of Clark County and nearby cities due to the limited context and intensity of the proposal. No group of people, including racial, ethnic, or socioeconomic group would bear a disproportionate share of the negative environmental consequences resulting from the Proposed Action.</p>
<p>Fish and Wildlife (Excluding Federally Listed Species)</p>		<p>X</p>	<p>Carried forward for analysis.</p>
<p>Floodplains</p>	<p>X</p>		<p>The Proposed Project area intersects Federal Emergency Management Agency (FEMA) regulated 100-year floodplains identified as Zone A, and subject to alluvial fan flooding. Alluvial fan flooding is characterized by “high velocity flows,” active processes of erosion, sediment transport, and deposition; and unpredictable flow paths” (44 CFR §59.1). The alluvial fan flows in the Proposed Project area originate from the La Madre Mountain ridge north of SR 159 and travel through the Proposed Project areas in braided channels. The Proposed Project alignment crosses 100 year floodplains (Zone A) north of Node # 5, South of Node # 4, and north of Node # 1. Work in these areas will occur within Nevada State Highway 159 in areas above the flood zone.</p>

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
Forestry	X		The Nevada Division of Forestry and the BLM Nevada Forestry Program regulate the removal and possession of cacti and yucca for personal or commercial uses. As such, these plant species are protected from disturbance unless a collection permit is obtained from the BLM or Nevada Division of Forestry. Yucca and Cacti are sparse to moderate in distribution within the creosote bush scrub community and occur in the immediate vicinity of Node 7. Crown Castle will adjust the boundaries of ground disturbance at these disturbance areas to avoid impacting these plant species. As such, no impacts to yucca or cacti species would occur as a result of project implementation.
Fuels/Fire Management		X	Carried forward for analysis.
Geology and Minerals	X		The Proposed Project will not affect any known mineral resources or their extraction. The Proposed Project does not have the potential to cause harm to humans related to geologic hazards. Soils disturbed during trenching activities will be placed back into the trenched areas, and no soils will be removed from the Proposed Action Area. Disturbed soils will be stored within the Proposed Action Area.
Human Health and Safety		X	Carried forward for analysis.
Hydrologic		X	Carried forward for analysis. It will be

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
Conditions			addressed in the Water Resources section.
Invasive Species/Noxious Weeds		X	Carried forward for analysis.
Lands and Realty	X		The Proposed Action would include installation of Proposed Project components in existing ROWs, including utility and public transportation ROWs. Construction activities would be temporary in nature. When Proposed Project activities are complete, permanent communication facilities and related infrastructure would not be in conflict with current ROW function and would not conflict with existing approved uses. The Proposed Action is in conformance with the Red Rocks Canyon National Conservation Area Resource Management Plan (RMP) and Record of Decision approved on May 20, 2005. Implementation of Project design features and BLM stipulations will ensure project is in compliance with this RMP. Other specific resources are addressed in those specific sections.
Lands with Wilderness Characteristics	X		There are no land with wilderness characteristics where Proposed Project components are proposed. The La Madre Mountain Wilderness and the Rainbow Mountain Wilderness areas are located west and southwest of the Proposed Project area within the larger RRCNCA.
Livestock Grazing	X		There are no grazing allotments

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
			associated with the Proposed Project area (BLM 2018b).
Migratory Birds		X	Carried forward for analysis.
National Conservation Lands		X	Carried forward for analysis.
Native American Religious Concerns	X		There are not any Native American concerns/issues that have been previously identified that would be associated with the project area. No additional discussion needed.
Noise	X		Proposed Action would comply with Clark County Noise Regulations and other minimization measures as stated in their Design Features and would minimize affects.
Paleontological Resources		X	Carried forward for analysis.
Prime or Unique Farmlands	X		There are no areas of prime or unique farmland within the Proposed Project site.
Rangeland Health Standards	X		The proposed action is outside of an active grazing allotment. Four fundamentals of rangeland health are listed in Title 43 CFR §4180.1. These include watersheds, ecological processes, water quality, and habitats. Potential impacts to these values are analyzed as part of the vegetation, hydrology, wildlife and federally listed species sections and are not analyzed in this section.

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
Recreation		X	Carry forward for Analysis
Socio-Economics	X		The Proposed Action would provide social and economic benefit during construction by employing workers for the duration of the project. Workers would provide social and economic benefit during operations by providing cellular service to the public. But it would not be to a degree that detailed analysis would be needed.
Soils		X	Carried forward for analysis.
Threatened, Endangered, Candidate, and Special Status Animal and Plant Species		X	Carried forward for analysis.
Transmission Corridors	X		The Proposed Action would be constructed within existing transmission corridors. Proposed Action activities would be consistent with the current use of these corridors. Therefore, Transmission Corridors would not be affected by the Proposed Action.
Travel/Transportation		X	Carried forward for analysis
Vegetation (Excluding Federally Listed Species)		X	Carried forward for analysis.
Visual Resources	X		The proposed action will be consistent

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
			with the BLM Visual Resource Management, lines and colors of the poles will remain subordinate to the landscape.
Wastes (Hazardous or Solid)	X		No hazardous wastes or materials are known to occur within the Proposed Project site (EPA 2018). Solid wastes and boring fluid, during construction, would be generated during the Proposed Action activities; however, Crown Castle would fully implement the Crown Castle proposed Project Design Features described in the Description of the Proposed Action that would negate impacts from these actions. All waste producing activities will be within a regulatory framework and will be managed in accordance with all federal, state and local waste management requirements.
Water Resources (Surface/Ground)		X	Carried forward for analysis.
Wetlands/Riparian Zones	X		The Proposed Project would cross the Red Rock Wash, which contains riparian habitat. However, no physical disturbance to this habitat would occur as a result of Proposed Project activities.
Wild and Scenic Rivers	X		There are no wild and scenic rivers in the Proposed Project Area boundaries (USFWS 2018).
Wilderness/Wilderness Study Areas (WSAs)	X		There are no federally designated wilderness areas or WSAs within the Proposed Project Area boundaries.

Resources	Not Present or Not Affected	May Be Affected (Carry Forward for Analysis)	Rationale for Not Present or Not Affected
Wild Horse & Burro Management	X		The Proposed Action includes design features to minimize or eliminate potential impacts to wild horses and burros.

3.1 Fish and Wildlife (Excluding Federally Listed Species)

3.1.1 Methods

Information regarding wildlife within the Proposed Project Area is based on the results of biological studies conducted in support of the Proposed Project in 2011 and 2016 (Synthesis Environmental Planning, 2016).

A reconnaissance-level survey of the Proposed Project site was conducted on June 28 and 29, 2011, and August 29 and 30, 2016. Surveys were conducted along transects spaced 30 to 50 feet apart within the Proposed Project site and buffer areas. Wildlife use of the site was described based on known and anticipated occurrences. Most species were recorded as present if they were observed, if species' vocalizations were heard, or if diagnostic field signs were found (i.e., scat, tracks, pellets). Some species known to occur in the region or for which suitable habitat is present within the disturbance zone or buffer area were recorded as "expected, but not observed." Surveys were conducted within the Proposed Project sites as well as a buffer area approximately 250 feet wide around the Proposed Project site.

3.1.2 Existing Conditions

Appendix D D (Biological Report) provides a list of animals observed on the Proposed Project site. These species include: White-tailed antelope squirrel (*Ammospermophilus leucurus*), Red-tailed hawk (*Buteo jamaicensis*), Coyote (*Canis latrans*) Turkey vulture (*Cathartes aura*), Common raven (*Corvus corax*), Merriam's kangaroo rat (*Dipodomys merriami*), Black-tailed jackrabbit (*Lepus californicus*) House mouse (*Mus musculus*), House sparrow (*Passer domesticus*), Western fence lizard (*Sceloporus occidentalis*), Desert cottontail (*Sylvilagus audubonii*), Side blotched lizard (*Uta stansburiana*) and Mourning dove (*Zenaida macroura*).

Please see Section 3.7 for a specific discussion related to the threatened, endangered, or special status species observed on the Proposed Project site.

3.1.3 Game Species

The BLM manages habitat for game species. Hunting Unit 262 covers portions of western Clark

County and provides for the hunt of elk and desert big horn sheep. However, based upon Red Rock Supplementary and Nevada Department of Wildlife Regulations, hunting, and trapping are not permitted within the portions of the RRCNCA where the Proposed Project is proposed.

3.2 Fuels/Fire Management

Vegetation in the project area consists primarily of creosote bush scrub where historical spacing between shrubs was too high to carry a large fire. Today, there are noxious weeds or invasive plant species such as red brome and puncture vine within the inter-shrub spaces to provide fuel loads sufficient to carry a potentially destructive fire. The BLM has been working to control invasive annual grass in Calico Basin, Moenkopi Road Campground, fire station, and Visitor Center by using pre-emergent herbicide to create temporary fuels breaks while maintaining the native shrub community.

The past several decades have seen numerous fires in RRCNCA, some of which have been caused by humans and others that were naturally started by lightning. In the immediate Proposed Project area, the Loop Fire burned 859 acres in 2005 and the Scenic Fire burned 1,611 acres in 2006; burn scars from these fires are still visible today. In 2005, the Goodsprings Fire burned about 34,000 acres, impacting about 9,000 acres in Red Rock. In 2013, the Carpenter 1 Fire burned about 28,000 acres in the Spring Mountains and impacted about 853 acres in Red Rock, mostly in the La Madre Mountain Wilderness Area. In 2018, about 90 acres burned in the Pine Creek Fire.

A fire station complex, including a fire station, quarters building, an office building for BLM rangers, and a helipad is located within the boundary of RRCNCA. The BLM has the responsibility to respond to wildfires within their jurisdiction and in support to local jurisdictions and agencies through agreements and mutual aid. BLM rangers provide for visitor safety, resource protection, federal regulation enforcement, and often serve as wildland fire investigators on human caused wildfires.

Fire protection services and emergency medical services within the City of Las Vegas are provided by Las Vegas Fire & Rescue. Fire Station 47, located at 91 Ridge Pine Street, is the closest fire station to the work that is proposed within the City limits.

Wireless communication services and network connectivity at the BLM Red Rock Fire Station are limited and hampered by bandwidth restrictions where many modern systems and applications are inoperable. Emergency response is mostly dependent on the BLM's 2-way radio system. Some improvements have been made by installing cellular boosters, but connectivity and bandwidth currently do not have the level reliability needed for today's emergency management and response.

3.3 Human Health and Safety

NEPA requires federal agencies to evaluate whether a Proposed Action is significant based on the "degree to which the Proposed Action affects human health or safety" (40 CFR 1508.27). Public health and safety is often considered within the context of other resources, such as air quality, water quality and/or quantity, environmental justice, or transportation, among others, and is typically assessed in terms of what the expected risk is to the human environment as a result of the Proposed

Action. A fundamental agency value of BLM is to operate in a safe manner and to provide a safe environment for the public.

Fire safety and emergency response are essential components of public health and safety. The BLM fire station on Moenkopi Road is an important asset for public health and safety and includes equipment for both standard and wildland fire fighting activities. Communication and interoperability are challenging issues at this facility due to lack of wireless communication technologies in the area, and the remoteness of the general area.

3.4 Invasive Species/Noxious Weeds

The RRCNCA provides unique environments for numerous plants including some non-native, invasive plants. Invasive and noxious plant species can outcompete native plants, especially after wildland fires. Such fires remove native vegetation and shade, destroying habitats for plants and animals. Often these species regenerate more quickly than the native vegetation, which creates an increased risk of wildfire. Native vegetation is at risk of decreasing due to expanding noxious and invasive plant species and wildfire.

New weeds are being introduced in RRCNCA on a regular basis due to various factors like disturbance, propagule pressure from adjacent lands, and vectoring from human activities. Noxious weeds are spread through many vectors, including wildlife and visitors to Red Rock. Soil disturbances and loss of native plant species increase the spread of noxious and invasive species. Non-native plants or invasive weeds are a major concern due to their potential to cause permanent damage to the natural plant communities.

Several laws authorize control of noxious weeds on public land under the BLM's administrative jurisdiction including: the Federal Insecticide, Fungicide and Rodenticide Act of 1910 (as amended in 1972, 1988 and 1996), the Federal Noxious Weed Act of 1975, the Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978. Additionally, Executive Order 13112 outlines the federal responsibility to "prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause..." Nevada Revised Statutes, Chapter 555.05 defines "noxious weeds" and mandates the extent that land owners and land management agencies must control specific noxious weed species on lands under their jurisdiction.

Noxious weed species found in RRCNCA include malta starthistle (*Centaurea solstitialis*), giant reed (*Arundo donax*), saltcedar (*Tamarix ramosissima*), Sahara mustard (*Brassica tournefortii*) and puncturevine (*Tribulus terrestris*). Malta starthistle and giant reed are classified Category A, indicating the occurrence of these species is limited throughout the state, thus all infestations must be actively controlled with the goal of eradication. Sahara mustard is classified Category B and must be eradicated where the action is deemed feasible. It is recognized that for Category B species, some infestations may be too extensive to be realistically controlled or eradicated. Saltcedar and puncturevine are Category C, indicating the species are present to such an extent that precludes active eradication in an environmental setting for many infestations. For species classified Category C, control is required primarily by nursery plant dealers.

There are also species in RRCNCA that are non-native and invasive yet have not been legally designated as noxious by the State of Nevada. In addition to the brome species, populations of tumbled mustard (*Sisymbrium irio*), crossflower (*Chorispora tenella*), African mustard (*Malcolmia africana*), curvseed butterwort (*Ranunculus testiculatus*), common dandelion (*Taraxacum officinale*), Jersey cudweed (*Gnaphalium luteoalbum*), and Russian thistle (*Salsola* spp.) have been documented along the project route.

Tamarisk and Russian olive are the primary weed species identified in springs. Surveys showed that horehound (*Marrubium vulgare*) is still present in Kiup Spring, giant reed (*Arundo donax*) and sweetclover (*Melilotus* Mill.) are present at La Madre, puncture vine and dallisgrass (*Paspalum dilatatum*) are present at Willow Springs. Puncture vine occurs along many of the social trails around Pine Creek.

Malta starthistle (*Centaurea melitensis*) has been under treatment at the Red Rock Fire Station for several years. Malta starthistle was found for the first time along Moenkopi Road leading from the fire station. Barbed goatgrass (*Aegilops triuncalis*) was found for the first time in southern Nevada growing in the runoff from the vehicle wash area at the fire station. According to the NRCS, barbed goatgrass occurs in several counties in California, one county in Oregon, and only in Washoe County, Nevada. Its listed as noxious in California and Oregon. The barbs of this species are so stiff that they often lodge in the mouth of animals that try to consume them and this can lead to severe injury or death. Barbed goatgrass is also a contributor to wildfire problems where it has expanded. Recently, woolly distaff thistle (*Carthamus lanatus*) was located and identified in Red Rock. This was determined to be the first official identification of this invasive species in Nevada.

The BLM uses vegetation treatments such as herbicides and non-herbicide treatment methods. Non-herbicide treatment methods include fire and mechanical, manual, and biological controls to combat the increase in non-native invasive plant species. The BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States, Programmatic Environmental Impact Statement (BLM 2007, 2016) provides guidance on using different methods to manage vegetation on BLM-administered lands.

The BLM has completed multiple projects in RRCNCA using various treatment techniques to control invasive and noxious weed including use of BLM approved herbicides:

- 2012- The BLM authorized treatment of brome grass and installation of fuel breaks under the Red Rock Hazardous Fuels Reduction Project.
- 2013- The BLM carried out the Restoration of La Madre, Rainbow, and Kiup Springs, which included weed treatments and removal of giant reed infestations.
- 2013- The Carpenter 1 Fire Emergency Stabilization and Rehabilitation Plan addressed post-fire weed infestations.
- 2016- The BLM initiated the Red Rock NCA Weed Treatment DNA to carry out further weed treatments.
- 2016- The Mojave Desert Burned Area Restoration of Desert Tortoise Habitat Project authorized weed treatments, including herbicide fuel breaks, to protect and enhance restoration areas.

3.5 Migratory Birds

3.5.1 Regulatory Background

3.5.1.1 Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act implements a series of international treaties that provide for migratory bird protection. The Act authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (16 USC 703) but does not regulate habitat. The list of species protected by the Act was revised in 2013 and includes almost all bird species that are native to the United States.

3.5.1.2 Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds

Signed on January 11, 2001, this Executive Order directs each federal agency taking actions that are likely to have a measurable effect on migratory bird populations to develop and implement a Memorandum of Understanding with the US Fish and Wildlife Service (USFWS) that promotes the conservation of migratory bird populations.

3.5.1.3 Memorandum of Understanding to Promote the Conservation of Migratory Birds

On April 12, 2010, the USFWS and BLM signed this Memorandum of Understanding pursuant to Executive Order 13186. The purpose of this Memorandum of Understanding is to strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and avoid or minimize adverse impacts on migratory birds through enhanced collaboration between the USFWS and BLM, in coordination with state, tribal, and local governments. This Memorandum of Understanding identifies specific activities where cooperation between the USFWS and BLM will contribute to the conservation of migratory birds and their habitat.

3.5.2 Methods

Information regarding migratory bird species within the Proposed Project Area is based on the results of biological studies conducted in support of the Proposed Project in 2011 and 2016 (Synthesis Environmental Planning 2016).

A reconnaissance-level survey of the Proposed Project site was conducted on June 28 and 29, 2011, and August 29 and 30, 2016. Surveys were conducted along transects spaced 30 to 50 feet apart within the Proposed Project site and buffer areas. Habitat types encountered during the surveys were characterized primarily by dominant and subdominant plant species. Wildlife use of the site was described based on known and anticipated occurrences. Most species were recorded as present if they were observed, if species’ vocalizations were heard, or if diagnostic field signs were found (i.e., scat, tracks, pellets). Some species known to occur in the region or for which suitable habitat is

present within the disturbance zone or buffer area were recorded as “expected, but not observed.” Surveys were conducted within the Proposed Project sites as well as a buffer area approximately 250 feet wide around the Proposed Project site.

3.5.3 Existing Conditions

Suitable foraging and nesting habitat (creosote bush scrub and desert wash) for migratory bird species was identified primarily within the buffer area of the Proposed Project site along Highway 159, the buffer area of the proposed hub station facility, within the Node 2 site and buffer area, within the Node 5 site/trench and buffer area, within the Node 3 site and buffer area, and along and under the existing power line aerial and underground BLM and Century fiber lines (Synthesis Environmental Planning, 2016).

A number of migratory bird species were observed on the fly during biological surveys, and included turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), house sparrow (*Passer domesticus*), and mourning dove (*Zenaida macroura*). No active nesting activities or sites were observed during the biological survey.

3.6 National Conservation Lands

The BLM manages the components of National Conservation Lands “in accordance with any applicable law (including Regulations) relating to any component of the system. and in a manner that protects the values for which the components of the system were designated.” Accordingly, discretionary uses are managed in a manner consistent with the protection of the components values and may be prohibited when necessary and as documented in the NEPA analysis for the particular activity in question.

The establishing act of Red Rock Canyon NCA (1990) specified that the following:

In order to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the area in southern Nevada containing and surrounding the Red Rock Canyon and the unique and nationally important geologic, archeological, ecological, cultural, scenic, scientific, wildlife, riparian, wilderness, endangered species, and recreation resources of the public lands therein contained, there is established the Red Rock Canyon National Conservation Area.

The conservation area shall consist of approximately 83,100 acres of generally depicted on a map entitled "Red Rock Canyon National Conservation Area—Proposed" numbered NV-RRC-NCA001, and dated June, 1990.

The Secretary, acting through the Director of the Bureau of Land Management, shall, subject to valid existing rights, manage the conservation area to conserve, protect, and enhance the resources described

The following BLM requirements also apply to the Proposed Action:

- Rights-of-Way and Transportation and Utility Corridors - When processing a new ROW application, to the greatest extent possible, through the NEPA process the BLM will: a) Determine the consistency of the ROW with the Monument or NCA’s objects and values, and

- b) Consider routing or siting the ROW outside of the Monument or NCA
- If new ROWs are authorized in NCA, consistent with 43 CFR Parts 2800 and 2880 and to the greatest extent possible: a) The ROW must share, parallel or adjoin existing ROWs, and b) The effects of projects from the grants of the ROW must be mitigated.
 - To the greatest extent possible, subject to applicable law, the BLM should use land use planning and project-level processes and decisions, avoid granting new ROWs in NCAs. The Red Rock Canyon GMP/RMP (BLM 2005, p62.) of the Standard Operating Procedures states the following for Utility/ ROWs Exclusion and Avoidance area - "In rare cases, due to public land boundaries and private inholdings, rights-of-way may be permitted based on consideration of the following criteria: a) Conflicts with other existing or potential resource values and uses, particularly visual resource impacts, and b) Availability of alternative and/or mitigation measures.

3.7 Paleontological Resources

Paleontological resources (fossils) are remains or traces of plants and animals that existed during the 600-million-year geological history of southern Nevada. A minimal amount of paleontological research has been conducted in this region.

600 million years ago, the land that is now Red Rock Canyon NCA was at the bottom of a deep ocean and the coast was in present day western Utah. A rich variety of marine life flourished in those waters and left behind deposits of shells and skeletons more than 9,000 feet thick. These were eventually compressed into limestone and similar carbonate rocks.

Starting approximately 225 million years ago, crustal movements caused the sea bed to slowly rise. Streams entering the shallower waters deposited mud and sand which later consolidated into shale and marine sandstone. Changing land and sea levels also trapped large bodies of water. These later evaporated, leaving behind layers of salt and gypsum in some areas.

About 180 million years ago the area was completely arid, much as the Sahara Desert is today. A giant dune field stretched from Red Rock Canyon NCA eastward into Colorado, and windblown sand piled more than a half mile deep in some locations. As the wind shifted the sands back and forth, old dunes were leveled and new ones built up, leaving a record of curving, angled lines in the sand known as crossbeds. These shifting sands were buried by other sediments and eventually cemented into sandstone by iron oxide with some calcium carbonate. This formation, known locally as the Aztec Sandstone, is quite hard and forms the prominent cliffs of the Red Rock escarpment. Exposure to the atmosphere led to the iron minerals in some areas to oxidize, giving the rocks their red and orange colors.

The most significant geological feature of Red Rock Canyon NCA is the Keystone Thrust Fault. The Keystone Thrust is part of a large system of thrust faults that extends north into Canada and began to develop approximately 65 million years ago. A thrust fault is a fracture in the earth's crust that is the product of compressional forces that drive one crustal plate over the top of another. This results in the oldest rocks on the bottom of the upper plate resting directly above the youngest rocks of the lower plate. At Red Rock Canyon NCA, the gray carbonate rocks of the ancient ocean have been thrust over the tan and red sandstone in one of the most dramatic and easily identified thrust faults found. The Keystone Thrust Fault extends from the Cottonwood Fault north, along State

Route 160, for 13 miles along the crest of the Red Rock escarpment. It then curves east along the base of La Madre Mountain before it is obscured by very complex faulting north of the Calico Hills.

Fossilized remains of corals, crinoids, blue-green bacteria, and sponges are found within the older limestone and dolomite rocks found in Red Rock Canyon. Recent fossil discoveries have included prehistoric foot prints of dinosaurs, mammals, and insects. Areas in Red Rock Canyon that are known localities for fossils are the Blue Diamond hills on the east side of SR 159, the hills along Cottonwood Valley south of SR-160, and the tops of the limestone mountains west behind the Red Rock Escarpment. No known fossil localities area located within the Proposed Project site.

3.8 Recreation

The RRCNCA RMP establishes management direction for lands within the Project area. The Project falls within the RRCNCA's Core and Visitor Center Areas. The Core Area is the primary area for recreational use in the RRCNCA, and covers approximately 60,000 acres. Recreational activities within the Project area include picnicking, camping, hiking, cycling, rock climbing, sightseeing, horseback riding, wildlife viewing, and photography.

The RRCNCA reports over 1 million visits every year to its Visitor Center. The area serves local residents, as well as visitors who come to the RRCNCA in conjunction with stays in Las Vegas. The Red Rock Canyon Scenic Loop Drive is a BLM National Scenic Backcountry Byway and traverses approximately 13 miles of the RRCNCA with trailheads, scenic overlooks, and picnic facilities along its route. Approximately 20 trails can be accessed directly from the Red Rock Canyon Scenic Loop Drive and the adjacent parking areas. The most visited areas in RRCNCA are the first three parking areas (Calico 1, Calico 2, and Sandstone Quarry) adjacent to Scenic Loop Drive after the Fee Station Kiosk. These three areas provide a wide variety of recreational amenities; everything from easy, family-oriented hiking trails to challenging trails for more seasoned hikers. In addition, many of the area rock climbing routes are located in the Calico Hills and can be directly accessed via trails connected to the Sandstone Quarry parking area.

The La Madre Mountain Wilderness borders Scenic Loop Drive to the North and East and the Rainbow Mountain Wilderness borders Scenic Loop Drive to the west; the wilderness areas are part of RRCNCA. The two adjacent wilderness areas can be accessed via the five trailheads (Oak Creek Canyon, Ice Box Canyon, Pine Creek Canyon, Sandstone Quarry, and Lost Creek) adjacent to Scenic Loop Drive. Moenkopi Road extends south from SR 159 and connects visitors to the Red Rock Campground, which is the only developed campground in RRCNCA. Red Rock Campground comprises 72 individual campsites, including 14 walk-in, five recreational vehicle and three handicap accessible sites. The RMP restricts motorized vehicles to existing roadways and prohibits them from off-highway (cross-country) use in the vicinity of Scenic Loop Drive.

3.9 Soils

Table 3.5, Soil Types Occurring in Proposed Project Area, and Figure 6 (see Appendix B), Soil Types Map, show the soil types occurring within the Proposed Project Area as identified using GIS data downloaded from the Natural Resources Conservation Service. This table, together with Figure 7 (see Appendix B), Farmland Classifications shows the areas of farmland classifications within the

and around the Proposed Project Area.

Table 3.5. Soil Types Occurring in Proposed Project Area

Soil Classification/Soil Type	Soil Description
Vace-Jean Association/Lithic Torriorthents-Rock Outcrop-Lithic and Deep Calciorthids	Excessively drained soils formed from alluvium derived from limestone, sandstone, and quartzite. This soil type has slopes of 2 to 8 percent. The combined thickness of the H1-H3 layers is 60 inches. This soil has very low runoff potential.
Jean Complex/Deep and Shallow Paleorthids-Calciorthids-Haplargids	Excessively drained soils formed from alluvium derived from limestone, sandstone, and quartzite. This soil type has slopes of 2 to 4 percent. The combined thickness of the H1-H3 layers is 60 inches. This soil has very low runoff potential.
Zeheme-Potosi-Rock Outcrop Association/Deep and Shallow Paleorthids-Calciorthids-Haplargids	Well drained soils formed from colluvium and/or residuum weathered from limestone. This soil type has slopes of 15 to 50 percent. The combined thickness of the H1-R layers is 19 inches. This soil has very high runoff potential.
Rock Outcrop-St. Thomas Complex, 15 to 30 Percent Slopes/Lithic Torriorthents-Rock Outcrop-Lithic and Deep Calciorthids	Well drained soils formed from colluvium derived from limestone and dolomite over residuum weathered from limestone and dolomite. This soil type has slopes of 15 to 30 percent. The combined thickness of the H1-H2 layers is 17 inches. This soil has very high runoff potential.
Bludiamond-Diamondhil association/Deep and Shallow Paleorthids-Calciorthids-Haplargids	Well drained soils formed from mixed alluvium derived from limestone and sandstone. This soil type has slopes of 2 to 8 percent. The combined thickness of the H1-H5 layers is 60 inches. This soil has high runoff potential.
Purob-Irongold Association/Deep and Shallow Paleorthids-Calciorthids-Haplargids	Well drained soils formed from alluvium derived from limestone. This soil type has slopes of 2 to 8 percent. The combined thickness of the H1-H4 layers is 60 inches. This soil has very high runoff potential.
Purob Extremely Gravelly Loam, 8 to 30 Percent Slopes/Lithic Torriorthents-Rock Outcrop-Lithic and Deep Calciorthids	Well drained soils formed from colluvium derived from limestone. This soil type has slopes of 2 to 8 percent. The combined thickness of the H1-H4 layers is 60 inches. This soil has very high runoff potential.

Source: NRCS 2018

As indicated on Figure 7 (see Appendix B), no prime farmland soils were identified within the Proposed Project site.

3.10 Threatened, Endangered and Special Status Animal and Plant Species

Special-status species are plants and animals that are legally protected under state and federal Endangered Species Acts (ESAs) or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing.

Special-status species known to occur or with potential to occur in the Proposed Project area were determined based on:

- A search of the NNHPD (NNHP 2016) and the USFWS online database of special-status species (USFWS 2016) for the Proposed Project area;
- Contact with regulatory agencies and others with knowledge of biological resources within the Proposed Project area; and
- Review of literature that describes special-status wildlife and plant species that are present in the general Proposed Project area.

Special-status plant species potentially occurring in the Proposed Project area were defined as those special-status species with known populations in or near the Proposed Project area and those known from habitats either identical to or similar to those found in the Proposed Project area. Figure 8 (see Appendix B) illustrates special-status wildlife species occurrences within the Proposed Project area and vicinity.

3.10.1 Regulatory Background

3.10.1.1 Endangered Species Act

The Endangered Species Act of 1973 (16 USC §§1531 et seq.), as amended, provides for the conservation of federally listed plant and animal species and their habitats. The Endangered Species Act directs federal agencies to conserve listed species and imposes an affirmative duty on these agencies to ensure that their actions are not likely to jeopardize the continued existence of a listed species or adversely modify its designated critical habitat.

Critical habitat is defined in the Endangered Species Act as:

the specific areas within the geographical area occupied by the species ... on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and ... specific areas outside the geographical area occupied by the species ... upon a determination by the Secretary [of the Interior] that such areas are essential for the conservation of the species. [16 USC 1532(5)(A)]

3.10.1.2 BLM Manual 6840 — Special Status Species Management

BLM Manual 6840 provides management policy for federally listed species and BLM-designated

sensitive species. Species classified as BLM-designated sensitive must be native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

- 1) there is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or
- 2) the species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk. BLM protects and manages habitat for the enhancement and protection of the species future existence.

3.10.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act is discussed in Section 3.3, above.

3.10.2 Nevada Revised Statutes

Species provided protection under Nevada Revised Statutes Chapter 501 (NRS 501) and listed in Nevada Administrative Code Chapter 503 (NAC 503) are protected under state law and are managed by the Nevada Department of Wildlife (NDOW). In some cases, species may not be harmed or subject to any “take;” in other cases, “take” is allowed but only with a license or permit. Under the statute, species may be classified as fur-bearing, game, upland game, migratory game, or protected (e.g., Protected Reptile NAC 503.080.1 or Game Mammal NAC 503.020). Protected species can also be further classified as sensitive, threatened, or endangered.

3.10.3 Red Rock Canyon National Conservation Area RMP

The Red Rock Canyon National Conservation Area RMP provides the following policies/protection measures for Threatened, Endangered, and special-status species:

- Policy 1A.1 - Conduct an ongoing program of population monitoring for T&E species, Candidate species (Blue Diamond cholla) and other Special Status Species (*Angelica scabrida*; *Calochortus striatus*; *Astragalus mohavensis* var. *hemigyrous*, (peregrine and springsnail).
- 1A.3 - Areas where raptors, in particular Peregrine falcons, are suspected to be nesting will be monitored to confirm nesting status. If nesting is confirmed, recreational uses, primarily rock climbing on canyon cliffs, will be monitored and evaluated to determine if use restrictions are needed.
- 1A.5 - Continue to encourage and support researchers inventorying caves and abandoned mines for bat colonies and potential roost sites. Bat gates will be installed where appropriate, starting with a gate in Wounded Knee Cave. Controlled public use will still be allowed.
- 3.1 - Protect threatened, endangered and sensitive plant species listed by Federal or State agencies by continuing to inventory NCA lands to more accurately determine the locations and population densities.
- 3.2 - Maintain or improve the condition of vegetation to its Potential Natural Community (PNC).

- 3.2a - Maintain a canopy cover of 20% (minimum), a basal cover of 5% (minimum) perennial native grass species and manage for perennial native grass species composition (by dry weight) of 5-10%, as limited by PNC.
- 3.3 - Restore plant productivity on disturbed areas.
- 3.3a - Rehabilitate, reclaim or revegetate with native species, areas subjected to surface disturbing activities and closed roads, where feasible.

3.10.4 Methods

Information regarding special status species within the Proposed Project Area is based on the results of biological studies conducted in support of the Proposed Project in 2011 and 2016 (Synthesis Environmental Planning, 2016).

A reconnaissance-level survey of the Proposed Project site was conducted on June 28 and 29, 2011, and August 29 and 30, 2016. Surveys were conducted along transects spaced 30 to 50 feet apart within the Proposed Project site and buffer areas. Habitat types encountered during the surveys were characterized primarily by dominant and subdominant plant species. Wildlife use of the site was described based on known and anticipated occurrences. Most species were recorded as present if they were observed, if species' vocalizations were heard, or if diagnostic field signs were found (i.e., scat, tracks, pellets). Some species known to occur in the region or for which suitable habitat is present within the disturbance zone or buffer area were recorded as "expected, but not observed." Surveys were conducted within the Proposed Project sites as well as a buffer area approximately 250 feet wide around the Proposed Project site.

Special-status plant surveys were also conducted on June 28 and 29, 2011, and August 29 and 30, 2016. Surveys were floristic in nature, where possible. The identity of plant species not currently blooming were determined, where feasible, by other characteristics or features of the plants structure. If a special-status plant species or population was observed, digital photographs were taken, the population was noted on a U.S. Geological Survey 7.5-minute quad map, and an estimate of the number of individuals present, their phenology, and the associated vegetation were recorded. Plant surveys were floristically based, and plant species were identified to species level or to a level necessary to detect rare plants if present. Field surveys were conducted along transects spaced 30 to 50 feet apart throughout the Proposed Project site and buffer areas to ensure that all habitats present were surveyed. All plant species observed were identified to the level necessary to ensure that any special status species present would be detected.

In addition, Synthesis Environmental Planning biologists independently reviewed databases and reports that address biological resources on the Proposed Project site, including the Nevada Natural Heritage Program Database (NNHPD) (NNHP 2016) and the United States Fish and Wildlife Service (USFWS) online electronic database of endangered species (USFWS 2016). Synthesis Environmental Planning also contacted regulatory agencies and others with knowledge of biological resources within the Proposed Project area and reviewed numerous other reference documents to determine what special-status wildlife and plant species might potentially be present in the Proposed Project area. Relevant technical information from these documents is incorporated and referenced as appropriate. These documents are incorporated by reference within this biological assessment, which is included as Appendix D to this document.

3.10.5 Existing Conditions

Based upon the biological assessment prepared by Synthesis Environmental Planning (2016), 32 special-status plant and animal species were identified as potentially occurring within the general vicinity of the Proposed Project area. Of these 32 species, 13 species have the potential to occur within the Proposed Project site and/or the buffer areas, while 19 of these species were determined to have no potential of occurring within these areas.

Information on the special-status species (plants and wildlife) that have been documented within the vicinity of the Proposed Project area are presented in Appendix D (Biological Report). This appendix also provides a likelihood of occurrence analysis for each species that may have potential to occur within the Proposed Project area.

3.10.6 Birds

Phainopepla (*Phainopepla nitens*) – Phainopepla is a protected species under NRS 501. Suitable nesting and foraging habitat [i.e., creosote bush scrub and desert wash] for the phainopepla was identified primarily within the buffer area of the Proposed Project site along Highway 159, the buffer area of hub station facility, within the Node 2 site and buffer area, within the Node 5 site/trench and buffer area, within the Node 3 site and buffer area, and along and under the existing power line aerial and underground BLM and Century fiber lines during biological surveys. No individual phainopepla or their nests were observed. Phainopepla may forage intermittently in the Proposed Project site and buffer area. Documented sightings of this species have not been recorded within the Proposed Project area.

Western Burrowing Owl (*Athene cunicularia*) – Western burrowing owl is a protected species under NRS 501. Suitable foraging habitat [i.e., creosote bush scrub and desert wash] for the western burrowing owl was identified primarily within the buffer area of the Proposed Project site along Highway 159, the buffer area of hub station facility, within the Node 2 site and buffer area, within the Node 5 site/trench and buffer area, within the Node 3 site and buffer area, and along and under the existing power line aerial and underground BLM and Century fiber lines during biological surveys. No individual western burrowing owls, known or potential nesting burrows, or signs of activity (i.e., pellets, whitewash, feathers, etc.) were observed within the Proposed Project site or buffer areas during biological surveys. Documented sightings of this species have not been recorded within the Proposed Project area.

Loggerhead shrike (*Lanius ludovicianus*) – Loggerhead shrike is a protected species under NRS 501. This species prefers open country with nesting habitat preference toward scattered trees and shrubs. They are commonly found in shrub habitat types comprising savanna, desert scrub, and occasionally, open woodland. Perches are an important habitat component used for hunting. If natural perches are unavailable, they will perch on poles, wires or fence posts. Population trend data in Nevada has shown an unexplained 5 percent decline per year since 1966.

Golden eagle (*Aquila chrysaetos*) – Golden eagle is a protected species under NRS 501. Generally the golden eagle can be found in open country, open wooded country, and barren areas, especially in hilly or mountainous regions. Nesting typically occurs on rock ledges, cliffs, or in large trees. They hunt while

soaring or from tall perches and can have territories ranging from 35 to 90 square miles. Population trends in Nevada are unknown, but golden eagles can be impacted due to loss or fragmentation of habitat and mortality due to collisions with vehicles or wind turbines or electrocution by power lines. The golden eagle is also protected by the Bald and Golden Eagle Protection Act. The 1978 amendment to the act authorizes the Secretary of the Interior to permit the taking of golden eagle nests that interfere with resource development or recovery operations.

Crissal Thrasher (*Toxostoma crissale*) - The crissal thrasher is a large thrasher found in the Southwestern United States (western Texas, southern New Mexico, southern Arizona, southeastern California, extreme southern Nevada, and extreme southwestern Utah) to central Mexico. The bird grows to 32 cm (12.5 inches), and has a deeply curved bill. It can be found near desert streams in dense underbrush, mesquite thickets, willows, scrub oak, high elevations in manzanita, and in the low desert near canyon chaparral. The bird seldom flies in the open. The crissal thrasher rarely flies, preferring to walk or run around its territory and will mostly run for cover when disturbed by a potential predator. The bird's name is derived from the characteristic bright coloring, in contrast to the balance of its plumage, of the area between its tail and vent—a region known as the crissum in bird terminology. The crissal thrasher builds its nests in dense shrubs about 3 to 8 feet up, typically under a large branch for protection both from other birds and the sun.^{[4][9]} The male and female cooperate in building the cup-shaped nest, which is built from twigs and lined with finer vegetation.^{[4][9]} The eggs, which are blue in color and lack spots (this is the only species of thrasher to lay eggs without spots),^[4] are laid in clutches of 2 to 3 eggs and incubated for about 2 weeks, with both the male and female taking turns on the nest. The young are fledged 11 to 13 days after they hatch.^[9] The chick is paler and duller than the adult, with a browner undertail. The species is an omnivore, eating both insects and spiders, and seeds and fruits. The crissal thrasher is mainly a ground feeder, using its long bill to probe for its prey amongst the leaf litter, particularly under shrubs.

Other Raptor Species – Suitable foraging habitat for raptor species [all vegetative communities found within the Proposed Project site and buffer areas] was identified throughout the Proposed Project site and buffer areas during biological surveys. However, no nesting habitat was observed in these areas. Raptors likely forage in the Proposed Project site and buffer areas intermittently. A single red-tailed hawk (*Buteo jamaicensis*) was observed flying over the Proposed Project site during biological surveys. Raptor species are afforded protection under the MBTA.

3.10.7 Mammals

Bat Species - Suitable foraging habitat for bat species was identified primarily within the buffer area of the Proposed Project site along Highway 159, the buffer area of hub station facility, within the Node 2 site and buffer area, within the Node 5 site/trench and buffer area, within the Node 3 site and buffer area, and along and under the existing power line aerial and underground BLM and Century fiber lines during biological surveys. Bat species with the potential to occur on the Proposed Project site includes:

- Pallid bat (*Antrozous pallidus*)
- Big brown bat (*Eptesicus fuscus*)
- Spotted bat (*Euderma maculatum*)
- California myotis (*Myotis californicus*)
- Long-legged myotis (*Myotis volans*)
- Western pipistrelle (*Pipistrellus hesperus*)

None of these bat species have federal protection, but they identified as being ranked by the Nevada Natural Heritage Program Global and State Ranks for Threats and Vulnerability. Appendix D provides information on the state status for each of these bat species.

No potential or known active roosting/maternity sites of these species were observed within the Proposed Project site or buffer areas during biological surveys. No individual bats were observed during biological surveys. Documented sightings of these species have been recorded within the Proposed Project area (see Figure 8 in Appendix B) (NNHP 2016).

3.10.8 Reptiles

Desert Tortoise (*Gopherus agassizii*) - Suitable habitat [i.e., valleys, flat areas, and dry alluvial fans and washes in Joshua tree-/Mohave yucca communities, creosote bush-saltbush and scrub habitats] was identified primarily within the buffer area of the Proposed Project site along Highway 159, the buffer area of hub station facility, within the Node 2 site and buffer area, within the Node 5 site/trench and buffer area, within the Node 3 site and buffer area, and along and under the existing power line aerial and underground BLM and Century fiber lines. They may live in a variety of soil types, including those of sand dunes, rocky hillsides, washes, sandy soils, and desert pavements] for the desert tortoise was identified primarily within the buffer area of the Proposed Project site, and within small patches within the Proposed Project site during biological surveys. No individual desert tortoises or burrows appropriate for use by this species were observed during biological surveys. Recorded observances of this species have been documented within the Proposed Project area (see Figure 8, see Appendix B) (NNHP 2016).

3.10.9 Plants

Four special-status plant species were determined to have potential to occur in the Proposed Project site and buffer areas: Spring Mountains milk vetch (*Astragalus remotus*), Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesil*), yellow two-tone beardtongue (*Penstemon bicolor* ssp. *bicolor*), rosy two-tone beardtongue (*Penstemon bicolor* ssp. *roseus*), and St. George blue-eyed grass (*Sisyrinchium radicum*).

Surveys were conducted within the potential blooming period for Spring Mountains milk vetch, Yellow tow-tone beardtongue, rosy two-tone beardtongue, and St. George blue-eyed grass during the 2011 surveys. Surveys occurred outside of the potential blooming period for Las Vegas Buckwheat.

No special-status plant species were observed during the course of botanical surveys. Common plant species observed during field surveys are listed in Appendix D – Biological Report). Recorded observances of these plant species have been documented within the Proposed Project area with the exception of Las Vegas buckwheat (see Figure 8, see Appendix B) (NNHP 2016).

3.10.10 Other Sensitive Biological Resources

Other sensitive biological resources also occur in the Proposed Project area and are presented below.

Yucca and Cacti Species - The Nevada Division of Forestry regulates the removal and possession of cacti and yucca for personal or commercial uses. As such, these plant species are protected from disturbance unless a collection permit is obtained from the Nevada Division of Forestry. Yucca and cacti are sparse to moderate in distribution within the creosote bush scrub community and occur in the immediate vicinity of Node 7.

3.11 **Travel/Transportation**

Some of the Proposed Project components are proposed within ROW of existing roads both within the RRCNCA and the City of Las Vegas. A description of these roads is provided below. In addition, some aerial components will be installed along existing utility poles and would be accessed via existing dirt roads along the utility easement. Figure 2 (see Appendix B) provides an overview of the Proposed Project components and the major roads in the Proposed Project vicinity.

3.11.1 **State Route 159**

A majority of the Proposed Project area is adjacent to SR 159, this includes Nodes 1, 5, 6, 7 and associated subsurface fiber-optic placement. SR 159 is an approximate 31-mile long east-west highway in Southern Nevada. SR 159 has two distinct segments. From the junction with SR 160 to the Las Vegas City limits it is a rural two-lane highway. When SR 159 enters Las Vegas it becomes West Charleston Boulevard.

3.11.2 **Red Rock Canyon Scenic Drive**

Red Rock Canyon Scenic Drive is a 13-mile loop road that connects to SR 159. It provides visitor to RRCNCA access to scenic stops and trailheads.

3.11.3 **Las Vegas Transportation Network**

Components of the Proposed Project will be located adjacent to roads in the City of Las Vegas, and are described as follows:

- **Sky Vista Drive** – Sky Vista Drive runs in a general north/south direction between West Charleston Boulevard in the South and Alta Drive in the North. It is planned to eventually connect with Far Hills Avenue to the north.
- **West Charleston Boulevard** - When SR 159 enters Las Vegas it becomes West Charleston Boulevard, a major east-west corridor bisecting the Las Vegas Valley and eventually terminating at Nellis Boulevard (SR 612). West Charleston Boulevard is identified as a Primary Arterial by the City of Las Vegas. The Proposed Project will place fiber-optic cable within and existing Century Link lease duct along West Charleston Boulevard.
- **Far Hills Avenue** - Far Hills Avenue is a generally east-west trending road starting at Anasazi Drive in the east and terminating at Fox Hills Drive in the west. The segment of Far Hills Avenue between the Bruce Woodbury Beltway and Anasazi Drive is identified as a Primary Arterial by the City of Las Vegas. The Proposed Project will place fiber-optic cable within and existing Century Link lease duct along Far Hills Drive (between Carriage Hill Drive and the Bruce Woodbury Beltway).

3.12 Vegetation

3.12.1 Methods

Biological surveys of the Proposed Project site were conducted on June 28 and 29, 2011, and August 29 and 30, 2016. Field surveys were conducted along transects spaced 30 to 50 feet apart throughout the Proposed Project site and buffer areas to ensure that all habitats present were surveyed. Habitat types encountered during the surveys were characterized primarily by dominant and subdominant plant species. The Biological Assessment Report can be found in Appendix D.

3.12.2 Existing Conditions

Three (3) vegetation communities were documented within the Proposed Project site and buffer area, and include creosote bush scrub, desert wash, and urban/ruderal/disturbed. See Figure 9 (see Appendix B), Vegetation Types Within the Proposed Project Area. Each of these communities is described further below.

3.12.2.1 Creosote Bush Scrub

Creosote bush scrub was observed in the buffer area of the Proposed Project site along Highway 159, the buffer area of hub station facility, within the Node 2 site and buffer area, within the Node 5 site/trench and buffer area, within the Node 3 site and buffer area, and along and under the existing power line aerial and underground BLM and Century fiber lines.

This vegetative community is characterized by an open canopy of creosote bush (*Larrea tridentata*). Other plant species observed within this community included Mojave sand-verbena (*Abronia pogonantha Heimeri*), catclaw (*Acacia greggii* A. Gray), goldenhead (*Acamptopappus sphaerocephalus*), Cooper's dyssodia (*Adenophyllum cooperi*), western sand-bur (*Ambrosia acanthocarpa* Hook.), white bur-sage (*Ambrosia dumosa*), devil's lettuce (*Amsinckia tessellata*), amsonia (*Amsonia tomentosa*), desert milkweed (*Asclepias erosa* Torrey), freckled milkvetch (*Astragalus lentiginosus* Hook.), four-wing saltbush (*Atriplex canescens ssp. canescens*), desert marigold (*Baileya multiradiata var. multiradiata*), sweetbush (*Bebbia juncea var. aspera*), woolly brickellia (*Brickellia incana* A. Gray), red brome (*Bromus madritensis ssp. rubens*), rubber rabbitbrush (*Chrysothamnus nauseosus ssp. mohavensis*), black-banded rabbitbrush (*Chrysothamnus paniculatus*), Mojave stinkweed (*Cleomella obtusifolia* Torrey Fremont), desert five-spot (*Eremalche rotundifolia*), perennial eriastrum (*Eriastrum densifolium ssp. mohavense*), hairy daisy (*Erigeron concinnus*), desert trumpet (*Eriogonum inflatum var. inflatum*), Wallace's woolly daisy (*Eriophyllum wallacei* A. Gray), sticky snakeweed (*Gutierrezia microcephala* A. Gray), desert calico (*Loeseliastrum matthewsii*), desert parsley (*Lomatium mohavense*), Cooper's box thorn (*Lycium cooperi* A. Gray), hoary aster (*Machaeranthera canescens var. leucanthemifolia*), desert dandelion (*Malacothrix glabrata* A. Gray), spiny menodora (*Menodora spinescens*), purple mat (*Nama demissum var. demissum*), yellow evening primrose (*Oenothera primaveris* A. Gray), buckhorn cholla (*Opuntia acanthocarpa var. coloradensis*), desert needles (*Palafoxia arida var. arida*), Palmer's penstemon (*Penstemon palmeri var. palmeri*), lace-leaf phacelia (*Phacelia distans Benth.*), honey mesquite (*Prosopis glandulosa var. torreyana*), desert almond (*Prunus fasciculata*

var. fasciculata), indigo bush (*Psoralea argophylla* var. *minutifolia*), desert chicory (*Rafinesquia neomexicana* A. Gray), bladder sage (*Salazaria mexicana* Torrey), common Mediterranean grass (*Schismus barbatus*), desert mallow (*Sphaeralcea ambigua* var. *ambigua*), turpentine broom (*Thamnosma montana*), puncturevine (*Tribulus terrestris* L.), Mojave aster (*Xylorhiza tortifolia* var. *tortifolia*), banana yucca (*Yucca baccata* Torrey), Joshua tree (*Yucca brevifolia* Engelm.), and Mojave yucca (*Yucca shidigera* K. E. Ortgies).

Creosote bush scrub varies in the structure and amount of available cover for wildlife. This habitat, with a variety of smaller shrub species and grasses, would support a more diverse wildlife community than habitats lacking this component. Examples of wildlife species observed or expected in the creosote bush scrub habitat in the Proposed Project area include western whiptail (*Cnemidophorus tigris*), side-blotched lizard (*Uta stansburiana*), greater roadrunner (*Geococcyx californianus*), Costa's hummingbird (*Calypte costae*), cactus wren (*Campylorhynchus brunneicapillus*), black-throated sparrow (*Amphispiza bilineata*), round-tailed ground squirrel (*Spermophilus tereticaudus*), Merriam's kangaroo rat (*Dipodomys merriami*), and kit fox (*Vulpes macrotis*).

3.12.2.2 Desert Wash

The desert wash vegetative community was observed crossing the Proposed Project site along Nevada State Highway 159 at several points, and under the existing power line aerial and underground BLM and Century fiber lines. The primary wash crossing the Proposed Project site was Red Rock Wash. A number of other washes also cross the Proposed Project site. This vegetation community consists of low, scrubby vegetation in sandy arroyos. This vegetative community occurs as narrow ribbons of vegetation in ephemeral (lasting only a limited time) water drainages. Most of the surface area within this community was bare ground.

Vegetative species observed in this community included catclaw (*Acacia greggii* A. Gray), desert milkweed (*Asclepias erosa* Torrey), freckled milkvetch (*Astragalus lentiginosus* Hook.), desert willow (*Chilopsis linearis* ssp. *arcuata*), honey mesquite (*Prosopis glandulosa* var. *torreyana*), desert almond (*Prunus fasciculata* var. *fasciculata*), and indigo bush (*Psoralea argophylla* var. *minutifolia*). Many of the plants identified in the creosote bush vegetative community were also observed integrating with this vegetative community. Desert wash is considered a sensitive habitat.

3.12.2.3 Ruderal/Disturbed

The ruderal/disturbed vegetative community was identified within the Proposed Project site and buffer areas wherever disturbed soils occurred, active land uses were present, or active land uses were absent where disturbance had occurred in the recent past. Although often comprised of non-native plant species, ruderal habitats, particularly at edges of natural communities, can provide foraging habitat for many species of birds and mammals.

Common vegetative species found in this community during surveys included weedy non-native species. Common species identified during the field visit included goldenhead (*Acamptopappus sphaerocephalus*), devil's lettuce (*Amsinckia tessellata*), desert marigold (*Baileya multiradiata* var.

multiradiata), fivehook basia (*Bassia hyssopifolia*), red brome (*Bromus madritensis ssp. rubens*), red-stemmed filaree (*Erodium cicutarium*), desert dandelion (*Malacothrix glabrata* A. Gray), yellow evening primrose (*Oenothera primaveris* A. Gray), Russian thistle (*Salsola tragus* L.), common Mediterranean grass (*Schismus barbatus*), desert mallow (*Sphaeralcea ambigua* var. *ambigua*), wire lettuce (*Stephanomeria pauciflora* [Torrey] Nelson), puncturevine (*Tribulus terrestris* L.), and Mojave aster (*Xylorhiza tortifolia* var. *tortifolia*).

3.13 Visual Resources

3.13.1 BLM Visual Resource Management

The BLM has initiated a visual resource management process to manage the quality of landscapes on public land and to evaluate the potential impacts on visual resources resulting from development activities. Visual resource management class designations are determined by assessing the scenic value of the landscape, viewer sensitivity to the scenery, and the distance of the viewer to the subject landscape. These management classes identify various permissible levels of landscape alteration, while protecting the overall visual quality of the region. They are divided into four levels (Classes I, II, III, and IV). Class I is the most restrictive and Class IV is the least restrictive in terms of changes that are allowed to the characteristic landscape (BLM 1986). An expanded description of each class is provided below:

Class I – Natural ecological changes and very limited management activity are allowed. Any contrast created must not detract attention. This classification is applied to wilderness areas, wild and scenic rivers and other similar situations.

Class II – Change in any of the basics (form, line, color, textures) caused by management activity, should not be evident in the characteristics of the landscape. Contrasts are seen but must not attract attention.

Class III – Contrasts to basic elements caused by management activities are evident but should remain subordinate to the existing landscape.

Class IV – Any contrast attracts attention and is a dominant feature of the landscape in terms of scale, but it should repeat the form, line, color and texture of the characteristic landscape.

The Proposed Project has components in areas identified as Class II, III and IV per the RRCNCA General Management Plan. Class II areas are adjacent to SR 159 where Proposed Project components are proposed. Class III areas are generally associated with the area inside and adjacent to the Scenic Loop Drive and the Fire Department and Red Rock Camping area in the Moenkopi Road area, south of SR 159. The Class IV area is associated with the Calico Basin community.

3.13.2 Visual Characteristics of the Proposed Project Area

Red Rock Canyon is a popular location for public recreation and leisure due to the unique geological and ecological characteristics occurring in a natural setting so close to a major population center (Las Vegas). The dominant visual amenity is the unique geologic features that result in a

3,000-foot escarpment running north-south along the west side of the Red Rock Canyon. The Calico Hills run along the east side of the Scenic Loop Drive and are also an important visual resource. Travelers along SR 159 also enjoy vistas to these visual features.

Appendix E presents the existing conditions and the proposed condition for the seven (7) node sites.

Within in the City of Las Vegas, Proposed Project components are proposed in urbanized areas within existing road right-of-way.

3.14 Water Resources (Surface/Ground)

3.14.1 Regional Overview

The Proposed Project Area overlies the following hydrologic unit, as defined by the US Geological Survey (National Hydrography Dataset 2018): 15010015 – Las Vegas Wash.

The Proposed Project Area is located within the 1,564 square-mile Las Vegas Valley basin located in Clark County in southern Nevada. This basin is designated Nevada Division of Water Resources (NDWR) Groundwater Basin 212 in Nevada Hydrographic Region 13 (Colorado River Basin; NDWR 2018). Average annual precipitation for this area is approximately 10 inches (BLM 2018e).

3.14.2 Groundwater

Depths to groundwater in Las Vegas Valley have been measured by the Nevada Division of Water Resources consistently since the early 1950's. There are 16 active sites and 92 inactive sites in the monitoring well network. Groundwater level data are currently being collected by the U.S. Geological Survey, Southern Nevada Water Authority, City of North Las Vegas, and the City of Las Vegas.

Bedrock transmits groundwater from recharge areas in the Spring Mountains and Sheep Range to valley-fill deposits in Las Vegas Valley. Paleozoic carbonate rocks and Permian, Triassic, and Jurassic clastic rocks form most of the bedrock basin (Miocene igneous rocks may form the southeast part). Carbonate rocks probably transmit most of the groundwater to the valley-fill, whereas clastic rocks at the south end of the Spring Mountains may only transmit minor amounts.

Paleozoic carbonate rocks are considered to be noncavernous and unable to store or transmit much water, except for the Sultan and Monte Cristo Limestones, which are believed to be primarily responsible for transmitting water from recharge areas to valley-fill deposits. Winograd and Thordarson (1975) found that Cambrian through Permian carbonate rocks in the vicinity of the Nevada Test Site (about 75 miles north of Las Vegas) have high fracture permeability. In addition, Hess and Mifflin (1978) showed that carbonate rocks throughout the Paleozoic section of eastern Nevada are highly permeable. Therefore, permeable zones throughout the carbonate rocks probably transmit water from recharge areas to the Las Vegas ground- water basin.

Maxey and Jameson (1948) also considered Permian, Triassic, and Jurassic clastic rocks and Miocene igneous rocks in the study area to be generally impermeable. However, gypsum and limestone beds in the clastic rocks and fractured zones in volcanic rocks could also be permeable.

Volcanic rocks interbedded with valley-fill deposits at the south end of the valley seem to restrict the vertical movement of water.

3.14.3 Surface Water

Red Rock Wash is the only major natural surface water feature found in the Proposed Project area. It generally runs during periods of rain fall and dries up during extended periods when it isn't raining. A number of other dry washes and channels are found throughout the Proposed Project area as well and may run during periods of heavy rainfall. Surface water features are shown on Figure 5 (see Appendix B), Water Features.

4.0 ENVIRONMENTAL EFFECTS

The following Chapter provides an analysis of the environmental effects that may occur by implementing either the Proposed Action or the no action alternative. The resources identified in Chapter 3 as being present and potentially impacted by the Proposed Project are analyzed. It also outlines mitigation measures that will be implemented in order to reduce negative impacts to the environment or local resources.

4.1 Fish and Wildlife (Excluding Federally Listed Species)

4.1.1 Proposed Action

The construction of the Proposed Action would cause a temporary disturbance of approximately 1.351 acres of ground surface, and permanently disturb approximately 0.003 acres. Habitat loss from disturbance and fragmentation may encompass a larger area for some species. Construction could cause injury or mortality to smaller, less-mobile species, as well as lizards and small mammals that forage or have burrow complexes within areas of habitat. Indirect effects from noise, human presence, and heavy equipment present during construction activities may lead to reduced foraging and breeding success for individuals displaced into surrounding areas. These impacts are expected to last for the three (3) month duration of the proposed construction activities. Wildlife would be able to return to the disturbed areas upon completion of ground-disturbing activities. Individuals that are not displaced during construction, or individuals that return to the Proposed Project site after construction, could be affected by the fragmentation caused by the overall footprint of the Proposed Project, causing reduced breeding success and increased susceptibility to predators or disease. This in turn could affect the distribution of large mammals and raptors that forage on rodents and small mammals.

No direct and indirect effects of permanent noise are expected from the Proposed Action. Installed facilities would not cause any noise after installation as the equipment will be passively cooled (i.e., there will not be any fans used). Wildlife are not expected to avoid Proposed Project areas any more than they would have pre-Proposed Project implementation.

Because of the minimal areal extent of noise effects from the completed Proposed Project, and the very low decibels emanating from telecommunications equipment, the small habitat acreage lost and population viability for any one species is not expected to be reduced as a result of the components of the Proposed Action.

The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

4.1.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and there would be no potential to impact wildlife.

4.2 Fuels/Fire Management

4.2.1 Proposed Action

Implementation of the Proposed Action could temporarily increase the potential for human caused fires during construction activities. Accidental discharge during transportation and storage of flammable materials or chemicals, such as fuel, could accelerate the ignition of fires in the Proposed Project Area. Impacts from these fires would vary based on fire size, fuel loading, and response times. Operations and maintenance activities could also cause wildfires, but at a level much less than construction activities. Crown Castle has proposed environmental protection measures to further reduce the potential for human caused fires. The BLM would be informed as soon as possible of all fires that occur within the Lease Area during construction activities. Use of fire control measures in The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would result in minimal impact on fire management.

Good communication is a key factor in providing for visitor safety, wildfire response, and emergency management. The Proposed Project could result in substantial increased benefits to Health and Human Safety and Wildland Fire Management at Red Rock. Better communication could decrease the time in which a wildfire or other emergency is reported. Communication during a wildfire would be better. Improved communication during a wildfire means increased visitor safety and better fire outcomes where communities or infrastructure is threatened. Communication at the BLM Fire Station could be better. The Project could improve communications, interoperability, and bandwidth above current levels. These improvements could result in increased efficiency in day to day operations. Fire fighters could conduct normal business that they now have to conduct elsewhere, where connectivity is better. Better communication to the BLM Fire Station would also be a benefit to the Project because wildfires could threaten Project infrastructure. In general, emergency response communication and visitor safety would improve if the Project were implemented.

4.2.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and no Proposed Project-related impacts to fire management would occur. Communication for emergency response and day to day operations would continue to be limited at current levels.

4.3 Human Health and Safety

4.3.1 Proposed Action

Implementation of the Proposed Project would improve wireless communications in the project area above those that currently exist. The BLM fire station on Moenkopi Road includes both equipment for residential and wildland fire events. Communication and interoperability are challenging at this facility and in the project area. The improvement of local wireless communications infrastructure will reduce response times to local emergencies and have a beneficial impact to interagency emergency communications and responses to

events. At the same time visitors, local residents and the general public will greatly benefit from better communication. This project has the potential to greatly benefit Human Health and Safety

4.3.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and no Proposed Project-related impacts to human health and safety would occur.

4.4 Invasive Species/Noxious Weeds

4.4.1 Proposed Action

The Proposed Project could result in the proliferation and expansion of weeds in the project area without mitigation. Increased vehicle traffic during all phases of the Proposed Project could also result in the proliferation and expansion of weeds in the project area. Vehicles are effective at introducing and/or spreading weeds by disbursing weed seed along roadways. More specifically, the increased vehicular activity at the project site has the potential to spread non-native invasive annual grasses. Studies suggest that the Mojave Desert is threatened by the spread of non-native, invasive annual grasses which results in increased fire and loss of natural resources. The increase of fine fuels may result in ignitions and ultimately increase the number of wildfires.

The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

4.4.1 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and no Proposed Project-related impacts related to invasive species and noxious weeds would occur.

4.5 Migratory Birds

4.5.1 Proposed Action

Implementation of the Proposed Project could potentially result in adverse impacts on special status avian species by causing abandonment of nests, nesting colony sites, and the destruction of active nest sites if Proposed Project activities occur during their active nesting period.

Nesting phainopepla, loggerhead shrike, crissal thrasher, western burrowing owls, and other migratory songbirds could potentially occur within the Proposed Project site or buffer areas during implementation of the Proposed Project. Avoidance, minimization, and The Crown Castle proposed Project Design Features described in the Description of the Proposed Action have been incorporated into the Proposed Project to ensure that potential impacts on nesting avian species are avoided or reduced. The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

4.5.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and no Proposed Project-related impacts to species covered under the MBTA would occur.

4.6 National Conservation Lands

4.6.1 Proposed Action

The Proposed Action would add a new ROW to National Conservation Lands, contrary to the ROW exclusion designated in the GMP. This project would add additional visual resources disturbances to National Conservation Lands. The Proposed Project components would be installed within existing ROWs that were previously and are currently disturbed. The majority of project components would be installed under the ground surface with the exception of components at the node locations. Equipment and poles as described in Section 2 of this EA describe the proposed above ground project components. Above ground project components have been designed to fit into the existing nature of the project area in order to reduce the visual impacts of these components.

4.6.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and there would be no potential impact to National Conservation Lands,

4.7 Paleontological Resources

4.7.1 Proposed Action

The impact indicator would be:

- The number of acres and miles of Potential Fossil Yield Classification 4 or higher that Proposed Project components overlie.

Under the Proposed Action, potential impacts on paleontological resources could occur during construction if these resources are discovered to be in the Proposed Project action area. There is a low probability that these resources are present based on geological conditions. The bulk of the area affected by the Proposed Project action is underlain by coarse Quaternary alluvium that has been designated as possessing a Potential Fossil Yield Classification (PFYC) of 2, or low paleontological sensitivity. PFYC 2 sediments are unlikely to contain vertebrate or scientifically significant invertebrate fossils. While fossils may be present in sediments designated PFYC 2, the chance of encountering them is very low to nonexistent. Nodes 5 through 7 appear to occur in Class 3 PFYC. Class 3 has moderate paleontological resources. Class 3 sedimentary geologic units vary in fossil significances, abundance, and predictable occurrence. Therefore, the Proposed Action has a low potential to result in

adverse effects on paleontological resources.

The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

4.7.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and no Proposed Project-related impacts to paleontological resources would occur.

4.8 Recreation

4.8.1 Proposed Action

Construction-related disturbances (for example, noise, dust, and large equipment) could affect visitor's experience and temporarily decrease the recreational value of the associated recreational elements of the project area. Staging of construction work and equipment could temporarily decrease existing parking at parking areas during use, resulting in some out-of-direction travel and visitor frustration during construction. Visitors may try to park in unauthorized spaces along State Highway 159 if alternative locations are not available and clearly identified. Hikers may also be diverted to other trails, increasing visitation in these areas, and in some cases walking through protected areas. This could result in temporary impacts to vegetation and create traffic and safety issues. Construction during off-peak periods, traffic control, proper signage for alternative access locations, area closures, and the sequencing construction so that key sites are not constructed at the same time could alleviate these temporary effects.

4.8.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and there would not be any potential impacts to recreational resources.

4.9 Soils

4.9.1 Proposed Action

Proposed Project components resulting in disturbance of soil would not be constructed on steep slopes. Portions of the Proposed Project area where aerial installation of Proposed Project components would occur in areas of steeper topography; however, no soil would be disturbed in these areas. Soil/ground disturbance would occur primarily in areas where node installation activities would take place, and in areas where trenching activities would occur that would involve the installation of fiber-optic conduit and vault boxes and equipment cabinets. Long term disturbance would occur in the vicinity of the installation of equipment cabinets and poles only. Short-term disturbance of soils would generally occur within areas previously disturbed as part of road transportation systems and utility and private road ROWs. These areas would be disturbed for a few days to three (3) months and would then be reseeded per BLM guidelines as needed. No Farmland with Statewide Importance or Prime Farmland were identified within the Proposed Project action area. Therefore, no significant acreage of any given soil type identified in the

Proposed Project action area would be disturbed during Proposed Project implementation.

The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

4.9.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and there would not be any potential impacts to sensitive plant species, sensitive avian species, or sensitive bat species. Potential impacts to tortoise would also be avoided.

4.10 Threatened, Endangered and Special Status Animal and Plant Species

4.10.1 Proposed Action

Proposed Project construction activities have the potential results in direct and indirect impacts to special status species, including special status plants, nesting avian species, bat species, and desert tortoise, as further described below.

Sensitive Plant Species

Implementation of the Proposed Project could potentially result in significant effects on sensitive plant species located in the Proposed Project site or buffer areas. Direct impacts could result from ground disturbance activities during Proposed Project implementation. Sensitive plant species could be directly impacted by crushing of plants by construction equipment. These effects could result in direct mortality of individuals or small populations of sensitive plant species. Avoidance, minimization, and mitigation measures have been incorporated into the Proposed Project as Design Features described in the Description of the Proposed Action to ensure that potential impacts on nesting species are avoided or reduced. The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

Potential Impacts to Nesting Special-Status Avian Species from Proposed Project Activities

Implementation of the Proposed Project could potentially result in adverse impacts on special-status avian species by causing abandonment of nests, nesting colony sites, and the destruction of active nest sites if Proposed Project activities occur during their active nesting period.

Nesting phainopepla, loggerhead shrike, crissal thrasher, western burrowing owls, and other migratory songbirds could potentially occur within the Proposed Project site or buffer areas during implementation of the Proposed Project. The Crown Castle proposed Project Design Features described in the Description of the Proposed Action have been incorporated into the Proposed Project to ensure that potential impacts on nesting avian species are avoided or reduced. The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

Potential Impacts to Special-Status Bat Species from Proposed Project Activities.

Creosote bush scrub and desert wash habitat within the Proposed Project site and buffer areas provide potential foraging, breeding, and roosting/maternity habitat for sensitive bat species. Proposed Project activities completed during the Proposed Project have the potential to impact and remove foraging, roosting/maternity, and breeding habitat for bat species.

Proposed Project activities also have the potential to indirectly affect roosting/maternity and breeding habits of bat species through the generation of noise and vibration from construction related activities. This noise and vibration have the potential to cause bat species to temporarily or permanently abandon roosting/maternity and breeding sites. The disturbance of or loss of breeding and roosting/maternity sites would be considered a significant impact. Avoidance, minimization, and mitigation measures have been incorporated into the Proposed Project to ensure that potential impacts on sensitive bat species. The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

Potential Impacts to Desert Tortoises from Proposed Project Activities

Implementation of the Proposed Project (specifically, ground disturbance activities within creosote bush scrub) could potentially result in impacts on desert tortoises and their burrow sites during Proposed Project description. Impacts would result due to crushing and mortality of individual or small groups of desert tortoises by construction equipment. Impacts could also occur if burrow sites of this species are crushed during construction activities. It should be noted that no desert tortoises or potential burrows that could be used by this species were observed during biological surveys. Avoidance, minimization, and mitigation measures have been incorporated into the Proposed Project to ensure that potential impacts on desert tortoises are avoided. The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts. Crown Castle will also follow the Terms and Conditions provided by the BLM for conducting work in tortoise habitat.

4.10.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and there would not be any potential impacts to sensitive plant species, sensitive avian species, or sensitive bat species. Potential impacts to tortoise would also be avoided.

4.11 Travel/Transportation

4.11.1 Proposed Action

Crown Castle will minimize the potential for impacts related to Proposed Project construction on local traffic/transportation from the Proposed Action, Crown Castle will implement the following measures:

- Preparation of a traffic control plan prior to Proposed Project construction
- Pre-construction training to address traffic controls.
- Implementation of traffic control measures in conformance with NDOT, BLM and City of Las Vegas specifications.

- If a lane of traffic needs to be blocked, flaggers will be used to direct traffic in the construction zones.

Because a majority of the construction of the Proposed Project would occur within public road ROWs, traffic would need to be controlled and coordinated. Traffic control measures would conform to NDOT and BLM specifications.

On SR 159, it would not be necessary to close any traffic lanes. However, road shoulders would be closed in some locations. Specifically, the buried cable section would take place under or just off the existing road shoulder and the work site would need to be cordoned off in accordance with Nevada DOT specifications. Typically, traffic control would be set up for each day's work operation.

For the BLM and private ROWs, it may be necessary to temporarily block one lane or entire access routes to traffic. These roads have low traffic volumes and, in most cases, at least one lane would remain open at all times to provide for through traffic and ensure emergency access. When it is necessary to block a lane of traffic, flaggers would be used to direct traffic in the construction zone. Delays to motorists would typically average one to two minutes. The Proposed Project would not result in substantial traffic delays or substantial access issues.

4.11.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and there any potential delays to traffic during Proposed Project construction would be avoided.

4.12 Vegetation

4.12.1 Proposed Action

The construction of the Proposed Action would result in a temporary disturbance of a total of 1.351 acres of short-term disturbance and 0.003 acres of long-term, permanent disturbance would occur as a result of implementation of the Proposed Action. The primary area of disturbance would occur within ruderal/disturbed habitat that provides little value to wildlife species. A very small amount of creosote bush scrub would be impacted during installation of the Proposed Action. Temporary impacts would be reduced by implementation of the environmental protection measures described previously in this section under a number of sections. Indirect effects of vegetation removal include the potential for the introduction or spread of invasive nonnative species, erosion, and loss of soil productivity.

Vehicles traveling to and from the construction sites would increase the amount of dust in the air. Dust may affect photosynthesis, respiration, and transpiration and allow the penetration of phytotoxic gaseous pollutants. Visible injury symptoms may occur, and generally there would be decreased productivity (Farmer 1993). However, enforcing a speed limit of 15 miles per hour, as committed to by Crown Castle in Chapter 2, would minimize the dust in the air and its effect on nearby vegetation. No impacts on vegetation would occur from operation of the Proposed Project.

However, vehicles traveling to and from the power plant would increase dust in the air, and impacts would occur as described for construction.

The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

The Proposed Project could result in the proliferation and expansion of weeds in the project area without mitigation. Increased vehicle traffic during all phases of the Proposed Project will also impact noxious and/or invasive weed. Vehicles are effective at introducing and/or spreading weeds by disbursing weed seed along roadways. More specifically the increased vehicular activity at the site has the potential to spread non-native invasive annual grasses. Studies suggest that the Mojave Desert is threatened by the spread of non-native, invasive annual grasses which results in increased fire and loss of natural resources (Brooks 1999). The increase of fine fuels may result in ignitions and ultimately increase the number of wildfires. Weed prevention and control are likely to minimize most weed impacts.

4.12.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and the short-term vegetation disturbance would be avoided. The Proposed Project site would stay in its current condition.

4.13 Visual Resources

4.13.1 Proposed Action

The impact indicator would be:

- Whether the Proposed Action is consistent or not with the designated Visual Resources Management class of the Proposed Project area.

Appendix C depicts the before and after condition (visual simulations) for the seven node locations for the Proposed Project.

To minimize the potential for impacts on visual resources from the Proposed Action, Crown Castle will implement the following environmental protection measures:

- Poles will be painted a color that blends with the surrounding area;
- Concealment shrouds will shield the antenna and will be painted a color that blends with the surrounding area;
- Equipment cabinets will be placed within a faux rock concealment shroud;
- Subsurface placement of fiber-optic cable to reduce visibility; and
- Co-location of aerial fiber-optic cable on existing utility poles to avoid placement of new poles.

The following is a description of the Proposed Project components and a discussion of the level of visual change and consistency with the designated Visual Resources Management Class.

4.13.1.1 Utility Poles/Nodes

Node 1: Node 1 will include a new 30-foot metal pole with an antenna concealment shroud at the top of the pole and a separate equipment cabinet with faux rock concealment. Node 1 is located adjacent to SR 159 within the existing ROW. This is adjacent to an area identified as Class II. Class II requires that any change in any of the basics (form, line, color, textures) caused by management activity, should not be evident in the characteristics of the landscape. Contrasts are seen but must not attract attention.

The pole would be painted in a neutral color to blend in with the surrounding landscape. The faux rock cabinet will conceal equipment and blends in with the existing landscape. While the pole would provide contrast, it would not attract undue attention. This proposed improvement would be consistent with the designated Visual Resources Management Class. Additionally, the speed limit on SR 159 is 50 miles per hours (mph), so the amount of time that a motorist or passenger would interact with the pole would be of a short duration.

Node 2: Node 2 will include a new 30-foot metal pole with an antenna concealment shroud at the top of the pole and a separate equipment cabinet with faux rock concealment. Node 2 is located at Moenkopi Road at the Fire Department Access Road. Visitors use this road to access the Red Rock Campground. This node is proposed within an area identified as Class III. Class III requires that contrasts to basic elements caused by management activities are evident but should remain subordinate to the existing landscape.

The pole would be painted in a neutral color to blend in with the surrounding landscape. The faux rock cabinet will conceal equipment and blends in with the existing landscape. The pole would not be visible from SR 159. While the pole would provide contrast, it would not attract undue attention. This proposed improvement would be consistent with the designated Visual Resources Management Class.

Node 3: Node 3 is an existing 29-foot wooden utility pole. As part of the Proposed Project, an antenna in a concealment box and an equipment box will be mounted to the pole. Node 3 is located approximately 0.6 miles northeast of the Red Rock Visitor Center and has low visibility from SR 159. This is proposed in an area identified as Class II. Class II requires that any change in any of the basics (form, line, color, textures) caused by management activity, should not be evident in the characteristics of the landscape. Contrasts are seen but must not attract attention.

The new antenna and equipment mounts would be painted in a neutral color to blend in with the surrounding landscape. The pole would not be visible from SR 159. The addition of the antenna and equipment boxes would not result in substantial visual changes, since a pole with several cables is already present. This proposed improvement would be consistent with the designated Visual Resources Management Class. The change would not be evident in the characteristics of the landscape.

Node 4: Node 4 will include a new 30-foot metal pole with an antenna concealment shroud at the top of the pole and a separate equipment cabinet with faux rock concealment. Node 4 is located at Red Rock Visitor Center Road/Scenic Loop Drive near the fee collection entrance. The site has

some visibility from SR 159, but that visibility is primarily associated with the existing improvements (e.g., building and parking area). This node is proposed within an area identified as Class III. Class III requires that contrasts to basic elements caused by management activities are evident but should remain subordinate to the existing landscape.

The pole would be painted in a neutral color to blend in with the surrounding landscape. The faux rock cabinet will conceal equipment and blends in with the existing landscape. The pole would be placed within an existing landscaped area next to an existing building and parking area. The pole would have limited visibility from SR 159 and would blend in with existing structures at the site. While the pole would provide contrast, it would not attract undue attention. This proposed improvement would be consistent with the designated Visual Resources Management class.

Node 5: Node 5 will include a new 30-foot steel pole with an antenna concealment shroud at the top of the pole and a separate equipment cabinet with faux rock concealment. Node 5 is located on SR 159 and Red Rock Canyon Stables Road. The site has some visibility from SR 159, but that visibility is primarily associated with the existing improvements (e.g., signage for horseback riding and vehicle parking area). This node is proposed in an area identified as Class II. Class II requires that any change in any of the basics (form, line, color, textures) caused by management activity, should not be evident in the characteristics of the landscape. Contrasts are seen but must not attract attention.

The pole would be wooden and painted in a neutral color to blend in with the surrounding landscape. The faux rock cabinet will conceal equipment and blends in with the existing landscape. The pole would be placed adjacent to an existing wooden fence and near a wooden sign entrance arch advertising horseback riding. The pole would be visible from SR 159 and would blend in with existing features at the site, including the fencing and signage noted above. While the pole would provide contrast, it would not attract undue attention. This proposed improvement would be consistent with the designated Visual Resources Management class.

Node 6: Node 6 will include a replacement 30-foot metal light pole with an antenna concealment shroud at the top of the pole and a separate equipment cabinet with faux rock concealment. Node 6 is located on SR 159 within the Red Rock Canyon Overlook parking area. The site has visibility from SR 159, but that visibility is primarily associated with the existing improvements in the site vicinity, including a bathroom building, shade structures over picnic tables, parking areas, and landscaping. This node is proposed within an area identified as Class III. Class III requires that contrasts to basic elements caused by management activities are evident but should remain subordinate to the existing landscape.

The site already has an existing light pole. At this location, the Proposed Project replaces the existing metal light post and add a shroud to the top to conceal the antenna. The faux rock cabinet will conceal equipment and blends in with the existing landscape. The pole would be visible from SR 159 and would blend in with existing features at the site, including a bathroom building, shade structures over picnic tables, parking areas, and landscaping noted above. This proposed improvement would be consistent with the designated Visual Resources Management class.

Node 7: Node 7 will include a new 30-foot metal pole with an antenna concealment shroud at the top of the pole and a separate equipment cabinet with faux rock concealment. Node 7 is located

adjacent to SR 159 within the existing ROW, approximately 1,000 feet south of the Lower Red Rock Parking area. There is a permanent radar speed sign at this location. This location is adjacent to an area identified as Class II. Class II requires that any change in any of the basics (form, line, color, textures) caused by management activity, should not be evident in the characteristics of the landscape. Contrasts are seen but must not attract attention.

The pole would be metal and painted in a neutral color to blend in with the surrounding landscape. The faux rock cabinet will conceal equipment and blends in with the existing landscape. While the pole would provide contrast, it would not attract undue attention. This proposed improvement would be consistent with the designated Visual Resources Management class. Additionally, the speed limit on SR 159 is 50 miles per hours (mph), so the amount of time that a motorist or passenger would interact with the pole would be of a short duration.

4.13.1.2 **Fiber-Optic Cable**

4.13.1.3

Fiber-optic cable would be either buried under the ground surface, or would be added to the existing power line utility alignment. Both activities would not add any additional visual impacts to the visual view scape beyond what already currently exists.

4.13.1.4 **Las Vegas Components**

The Proposed Project includes installation of fiber-optic cable in existing or new subsurface conduit within road ROW in the City of Las Vegas. The area where the subsurface placement will occur is within urbanized areas of the city adjacent to residential development.

4.13.2 **No Action Alternative**

Under the No Action Alternative, there would be no construction-related temporary change nor any permanent visual changes since the Proposed Project components would not be constructed. The visual environment would stay as in its current condition.

4.14 **Water Resources (Surface/Ground)**

4.14.1 **Proposed Action**

Ground disturbing activities would occur for construction of the Proposed Project. As detailed in Table 2.1, a total of 1.351 acres of short-term disturbance and 0.003 acres of long-term, permanent disturbance would occur as a result of implementation of the Proposed Action. The potential exists that some erosion may occur at disturbed areas should the Proposed Project take place during any substantial rain events, especially where original topography is steeper with a soil cover. This could result in distribution of sediment down gradient of the disturbed areas, possibly into stream channels outside of the Proposed Action area. Additionally, if these areas remain disturbed after Proposed Project implementation, impacts could occur to surface waters. All Proposed Project related components and new disturbance is proposed outside of any stream channels or surface waters. This is not only desirable from an environmental perspective, but also for engineering considerations.

Stream channels and washes represent low points in the topography. Also, soils within streams are less stable due to higher erosion and higher water saturation.

No Proposed Project components are proposed that would affect groundwater resources.

The Crown Castle proposed Project Design Features described in the Description of the Proposed Action would minimize the potential for impacts.

4.14.2 No Action Alternative

Under the No Action Alternative, none of the elements included in the Proposed Project would be constructed and no Proposed Project-related impacts to species covered under the MBTA would occur.

4.15 Cumulative Impacts on Affected Resources

Cumulative impacts are the incremental impacts of an action added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR 1508.7). These actions include projects identified within the spatial (geographic) and temporal (timeframe) boundaries of the action considered in this EA. For this project, the spatial limits are bound by a one (1.0) mile radius of the Proposed Action. The temporal limits are bound by the anticipated construction timeframe of the detention basin.

4.15.1 Past and Present Actions

A review of an area approximately one (1.0) mile buffer around the Proposed Project components was used to compile a list of past and present actions which have impacted the assessment area to varying degrees.

Existing land ownership in the project area is primarily BLM land with the exception of the following areas (see Figure 3 in Appendix B, Regulatory Boundaries Map):

- Private lands approximately 0.7 miles to the southeast of the Proposed Action area in the vicinity of Node # 6 and 7.
- Private lands in the Calico Basin area through which the Proposed Action will be constructed (north of Node # 3).
- Private lands through which the Proposed Action will be constructed at the eastern terminus of the Proposed Action (east and north of Node # 1).

Primary past and present actions within the Proposed Action Area have primarily occurred along the eastern boundary of the Proposed Action Area within the City of Las Vegas. Tract housing development has filled the majority of private lands to the east of BLM owned lands. These developments have been constructed primarily over the last 10-15 years. Private undeveloped lands are still located in the study area.

The Summerlin South Detention Basin was constructed by Clark County south and north of the SR 159 in the eastern area of the Proposed Action. The eastern portion of the Proposed Action will be constructed along SR 159 in the area of this development.

There are right-of-way grants for existing utilities and roadways adjacent to the project on public lands and a large R&PP lease for an Open Space County park southeast of the project. As such, the impacts of past and present actions combine to form existing conditions. Existing conditions were considered in the affected environment section of this EA.

RRCNCA Past and Present Planning and Projects

Factor	Action	Description	Area Affected
Past Planning	RRCNCA RMP (2005)	RMP describes the appropriate uses and development of the conservation area as it provides management guidance and identifies land use decisions to be implemented for management.	198,000 acres of public lands in the RRCNCA in Clark County.
Past Project	Red Rock Scenic Drive Trail System (1995)	A 13-mile one-way paved road and 46 miles of paved and unpaved trails.	Located within the core area, the Red Rock Scenic Loop Drive is for visitors to drive, bike, or hike. The remaining miles of trail system provide access to other areas within the core area and beyond. The Red Rock Scenic Loop Drive Trail System is used for casual recreation use as well as for permitted activities. The system of trails continues to be maintained today.
Past Project	Cottonwood Valley Trail System (1996)	Approximately 60 miles of trails in the Cottonwood Valley area.	Located adjacent to the core area, the Cottonwood Valley Trail System provides a network of access to areas south of the core area. It is used for casual recreation use as well as for permitted activities. The system of trails continues to be maintained today.
Past Project	Visitor Center (April 2010)	Construction of new Visitor Center, Amphitheater, and outdoor interpretive space. Old Visitor Center converted to BLM office facility.	Located within the core area, the newly constructed Visitor Center provides additional indoor and outdoor space for viewing and educational interpretation for enhanced visitor experience. The additional BLM office space created by the conversion of the former Visitor Center allows for more staff work space enabling for enhanced onsite support for RRCNCA. It is anticipated that visitation may

Factor	Action	Description	Area Affected
			increase as a result of the new infrastructure and additional staff support.
Past Project	SR-159 Corridor Trail Feasibility Study and Programmatic Environmental Assessment (PEA) (2010)	<p>The PEA analyzed a network of trails intended to enhance connections from municipalities and the county into Red Rock Canyon.</p> <p>Inter-connectivity to trails in other municipalities and federal lands. The Zone 2 Trail is consistent with the planned systems trails that would make connections to non-motorized trails outside</p> <p>the RRCNCA. In addition, the Zone 2 Trail would connect to widely used existing on- road bicycle undesignated routes.</p>	Planning for this project included consultation with trail planners from Clark County to accomplish these means. This proposed trail alignment is intended to connect nodes within RRCNCA, including both ends of the Scenic Drive. In the next phase of design, the proposed trail segments will add connections to the campground, Spring Mountain Ranch State Park, and Bonnie Springs.
Past Project	Wastewater system upgrade to Red Rock Visitor Center	Red Rock Visitor Center upgrade of septic system.	Red Rock Visitor Center is located within the core area. Improvements to the wastewater system would accommodate the increased use and address human health and safety.
Past Project	Underground Distribution Lines	15-kilovolt electrical lines to fire station and campground	The new electrical lines extend along SR 159 and Moenkopi Road.
Past Project	Upgrades to Red Rock Fire Station	<p>Facility improvements include:</p> <ul style="list-style-type: none"> ▪ Upgrade of septic system ▪ Installation of a well <p>Installation of communication system</p>	Red Rock Fire Station is located in the core area and improvements to the facility would accommodate use and address health and safety for onsite staff members who provide for protection of resources.

Factor	Action	Description	Area Affected
Past Project	Upgrades to existing Red Rock Campground	<ul style="list-style-type: none"> ▪ Campground improvements include installation of: ▪ Campsite parking stalls and parking lot ▪ Well ▪ Shade structures ▪ Solar panels for electricity to the site Concrete pads for picnic tables	Campground is located in the core area and improvements to the facility would result in improved visitor experience and potential increase in use.
Past Project	Geotechnical Investigation for BLM-FHWA RRCNCA Scenic Loop Drive Improvement Project	<ul style="list-style-type: none"> ▪ Borings and seismic survey to provide geotechnical analysis and recommendations for inclusion into the Red Rock Canyon Low Water Crossing and Pavement Improvement Project. 	Along Scenic Loop Drive within the paved surface of the existing roadway and shoulder.
Past Project	<ul style="list-style-type: none"> • Red Rock Canyon National Conservation Area Low Water Crossing and Roads Improvement Project; and • Red Rock Canyon National Conservation Area Scenic Loop Drive and Parking Areas Improvements Project 	<ul style="list-style-type: none"> ▪ The project construction improved road, low water crossings with bridges, parking lots, and circulation at the Fee Station, Visitor Center and Scenic Drive in the Core Area of RRCNCA. 	Located on the Scenic Drive within the Core Area of Red Rock Canyon NCA.
Current Project	<ul style="list-style-type: none"> • Red Rock Hazardous Fuels Reduction Project 	Treatment using herbicide, mowing, blading, or combination of these methods to remove invasive/noxious weeds and to create fuel breaks.	Fuels reduction treatments in and around the core area of RRCNCA would treat invasive/noxious weeds adjacent to roads, trails, and in previously burned areas to create fuel breaks and limit potential spread fire in the event of a wildland fire. Native plant species would be avoided.
Current Planning	Transportation Feasibility Study	Analysis of current core area transportation infrastructure (Scenic Drive, trails, trailheads, and parking) to find solutions to current transportation concerns and potential future issues because of increased visitor use.	The core area of the RRCNCA including the Scenic Drive, adjacent facilities, and transportation infrastructure.

Factor	Action	Description	Area Affected
Current Planning	RRCNCA RMP Amendment — Bolting in Wilderness	Analysis of the current bolting restrictions in RRCNCA wilderness to find solutions for safe climbing.	La Madre Mountain and Rainbow Mountain Wilderness Areas, approximately 27,879 acres and 20,311 acres of which (respectively) are located within RRCNCA.
Current Project	Special Recreation Permits in the Core Area of Red Rock Canyon NCA	The Programmatic EA analyzed a number of Special Recreation Permits for issuance over a given period of time within the Core of RRCNCA with the decision document signed in 2012. New and renewal SRP applications have NEPA processed through a Determination of NEPA Adequacy documentation which checks and verifies if the Proposed Action was adequately assessed in the Programmatic EA. If not, a separate EA is prepared.	Located adjacent to the core area, the Cottonwood Valley Trail System provides a network of access to areas south of the core area with various casual recreation use and permitted activities occurring there regularly.
Current Project	Special Recreation Permits for the Cottonwood Valley Trail System	The Programmatic EA analyzed a number of Special Recreation Permits for issuance over a given period of time within the Cottonwood Valley Trail System of RRCNCA with the decision document signed in 2012. New and renewal SRP applications have NEPA processed through a Determination of NEPA Adequacy documentation which checks and verifies if the Proposed Action was adequately assessed in the Programmatic EA. If not, a separate EA is prepared.	Located adjacent to the core area, the Cottonwood Valley Trail System provides a network of access to areas south of the core area with various casual recreation use and permitted activities occurring there regularly.
Current Project	Red Rock Visitor’s Center Well Head and Water Line Replacement Project	Replacement of the tank and water line that provide water to the Visitor Center.	Red Rock Visitor Center is located within the core area. Improvements to the well and water line would improve functionality and service.

Factor	Action	Description	Area Affected
Current Project	Mojave Desert Burned Area Restoration of Desert Tortoise Habitat	The Programmatic EA analyzed the restoration of Desert Tortoise Habitat in burned areas in Southern Nevada including in Red Rock Canyon NCA with the decision document signed in 2017. Project implementation is ongoing.	
Current Project	Weed Control and Restoration at Springs and Riparian Areas in Red Rock Canyon National Conservation Area	Proposed weed control, hazardous fuel reduction, and restoration activities at any or all of the springs and their associated streams and riparian areas within RRCNCA.	Springs and Riparian Areas in Red Rock Canyon National Conservation Area
Current Project	Fee Station Infrastructure Improvements at Red Rock Canyon National Conservation Area	Proposed Improvements include: <ul style="list-style-type: none"> • Installing new exterior LED lights at the Fee Station and parking area. • Building an additional controlled entry “Fast Pass” lane at the Fee Station; • Building a Ride Share lane at the Fee Station Entrance 	Fee Station at Core Area of RRCNCA
Current Project	Red Rock Canyon Trail and Intersections Project [NV FLAP 500 (1) Project]	<ul style="list-style-type: none"> • Proposed Multi-use trail to connect Summerlin with the Red Rock Scenic Drive Entrance 	From Charleston Blvd to RRCNCA Fee Station, on west side of SR 159.
Current Project	Geotechnical Investigation for BLM-FHWA RRCNCA Scenic Loop Drive Improvement Project	<ul style="list-style-type: none"> • Borings and seismic survey to provide geotechnical analysis and recommendations for Red Rock Canyon Trail and Intersections Project [NV FLAP 500 (1) Project]. 	From Charleston Blvd to RRCNCA Fee Station, on west side of SR 159.

4.15.2 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions are those actions that are known or could reasonably be anticipated to occur within the study area and within a time frame appropriate to the expected impacts from the Proposed Action. For this project, the time frame for potential future actions is assumed to be the anticipated construction of the Proposed Action components. ^[1]SEP

Reasonably foreseeable actions include residential and/or commercial development on private land in the area as described previously, primarily in the eastern side of the Proposed Action. These undeveloped private lands in the eastern side of the Proposed Action have been in private ownership since 2003 and are zoned for low-density residential. Development of privately owned areas would result in some traffic impacts and loss of natural habitat. The R&PP land leases to the County that are within the project radius are planned as open space with hiking trails along the mesa tops and ridges.

RRCNCA Reasonably Foreseeable Future Planning and Projects

Factor	Action	Description	Area Affected
Future Project	State Route 159 Multi-Use Trail — Zone 2	The 3.1-mile Zone 2 Trail roughly parallels SR-159 on the western side and extends from the Red Rock Visitor Center to the Scenic Drive Exit Lot.	Located within the core area, the Zone 2 Trail is one segment of the five segment SR 159 Corridor Trail intended to connect to trails in other municipalities and federal lands. With the EA completed in early 2012, the Zone 2 project is shelf-ready and pending funding for construction. This hiking/biking/equestrian riding trail would provide access into RRCNCA for casual recreation users as well as for permitted activities. It is anticipated that visitation may increase as a result of the completion of the trail.
Future Planning	Transportation and Travel Management Plan	Analyzing, defining, and designating current and future roads, trails, signage, and information systems within the RRCNCA.	198,000 acres of public lands in the RRCNCA in Clark County.
Future Planning	Calico Basin Recreation Area Management Plan	Analyzing, defining, and designating current and future actions within the Calico Basin Recreation Area.	5,700 acres of public lands in the RRCNCA in Clark County.

4.15.3 Cumulative Impacts on Affected Resources

Impacts associated with past, present, and reasonably foreseeable future actions are generally created by ground or vegetation-disturbing activities that effect natural and cultural resources in various ways. Of particular concern is the accumulation of these impacts over time. This section of the EA considers the nature of the cumulative effect and analyzes the degree to which the Proposed

Action and alternatives contribute to the collective impact.

4.15.3.1 Fish and Wildlife (Excluding Federally Listed Species)

Cumulative Impacts

Past and present actions have impacted wildlife through the removal and degradation of habitat. Impacts from past and present actions would likely continue under the reasonably foreseeable future actions. The Proposed Action would temporarily and permanently remove potential wildlife habitat. Additional impacts on wildlife could occur from expanding current uses in the Proposed Action Area. Furthermore, changes in climate may cause geographic shifts in vegetation communities. This could cause the displacement of the wildlife species that depend upon those habitats for survival. The Proposed Action would cumulatively contribute to habitat removal, degradation, and wildlife disturbance. Cumulative contributions from the Proposed Action would be largely limited to the construction phase of the Proposed Action. During the operational phase, habitat would be permanently removed, but impacts from noise and human disturbances would be reduced. In addition, similar abundant habitat is found in the area and region, and reseeded of disturbed areas could re-establish some wildlife habitat. Overall, the Proposed Action would have a negligible contribution to cumulative effects on wildlife species within the analysis area.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

4.15.3.2 Fuels/Fire Management

Cumulative Impacts

Fire risk has been and is present within the Proposed Action Area. The Past and Present Actions above are expected to continue. These actions will continue to pose fire risk conditions within the Action Area. The Proposed Action would pose a minor risk of sparking a fire from the use of heavy equipment. Because other current and reasonably foreseeable future actions carry a similar risk, the Proposed Action could contribute to the cumulative risk of fire started by human activity in the area. However, improved communication during wildfire emergencies could improve fire fighter and visitor safety. This would be a benefit to Red Rock and surrounding areas.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

4.15.3.3 Human Health and Safety

Cumulative Impacts

Implementation of the Proposed Project would improve wireless communications in the project area above those that currently exist. The improvement of local wireless communications infrastructure will reduce response times to local emergencies and have a beneficial impact to interagency emergency communications and responses to events. At the same time visitors, local residents and the general public will greatly benefit from better communication. This project has the potential to greatly benefit Human Health and Safety. No negative, cumulative impacts are expected as a result of project implementation.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

4.15.3.4 Invasive Species/Noxious Weeds**Cumulative Impacts**

Past and present actions within the Proposed Study Area have added to noxious and invasive weed populations in the area. Implementation of the Proposed Project has the potential to further spread weed populations in the project area, and thus could lead to long-term cumulative and residual impacts. With the implementation of the noxious weed control plan prepared by Crown Castle, cumulative impacts would be avoided.

Residual Impacts

With the implementation of the noxious weed control plan prepared by Crown Castle, residual impacts would be avoided.

4.15.3.5 Migratory Birds**Cumulative Impacts**

The Proposed Action combined with past, present, and future actions will continue to have an impact on Migratory birds. Migratory birds could be injured or killed during vegetation removal and grading activities. Adult birds may be able to flee the area; however, during migratory bird nesting season, eggs and juvenile birds that are confined to nests may be killed. Some native plant communities that provide habitat to nesting migratory birds would be eliminated. These impacts could be minimized by employing a biologist to survey for nests and young prior to ground disturbance during bird breeding season or avoiding ground disturbing activities during the nesting season. Crown Castle will also follow the proposed Project Design Features described in the Description of the Proposed Action.

Residual Impacts

No residual impacts are projected to occur from the proposed activities

4.15.3.6 National Conservation Lands**Cumulative Impacts**

Past and present actions have or will impact the National Conservation Lands through increased visual disturbances. The Proposed Action will permanently affect visual disturbances, a major value to the NCA as stated in its enabling legislation. The project proponent has agreed to design aboveground project components to blend into the surrounding environment, lessening the long-term cumulative impact of the project. These visual impacts will also classify as residual impacts.

Residual Impacts

Any residual impacts would be mitigated through the implementation of Proposed Design Features, mitigation measures, and BLM Stipulations.

4.15.3.7 Paleontological Resources

Cumulative Impacts

The Past and Present Actions described above are expected to continue to impact resources into the future. Direct and indirect impacts of the Proposed Action on paleontological resources would be limited, because the majority of the project site has a low likelihood of containing paleontological resources. Since other actions are currently taking place in the Proposed Action Study Area, the Proposed Action could contribute to cumulative impacts on paleontological resources. However, because of the low paleontological sensitivity of area resources this incremental contribution would be minimal.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

4.15.3.8 Recreation

Cumulative Impacts

Past, present, and future designated trails, trailheads, roads, parking areas, facilities, and infrastructure within the RRCNCA have been developed to provide access and recreational opportunities for visitors and cumulatively have improved the recreational experience and opportunities in the RRCNCA. The RRCNCA RMP provides management guidance and land use decisions for recreation and resource protection, including for the Proposed Project. The project could have temporary effects on recreation. When combined with past, present, and reasonably foreseeable future actions, no long-term cumulative effects to recreation are anticipated.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

4.15.3.9 Soils

Cumulative Impacts

When added to existing and reasonably foreseeable actions, the cumulative impacts to soils would be minimal and would include decreased potential for erosion due to soil stabilization.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

4.15.3.10 Threatened, Endangered, Candidate, and Special-Status Animal and Plant Species

Cumulative Impacts

Past and present actions have impacted threatened, endangered, candidate, and special status animal and plant species through the removal and degradation of habitat. Impacts from past and present actions would likely continue under the reasonably foreseeable future actions. Additional impacts could occur from expansion of these existing activities. Furthermore, changes in climate could cause geographic shifts in vegetation communities, leading to the displacement of the species that depend upon those habitats for survival. The Proposed Action would cumulatively contribute to habitat removal and degradation, as well as disturbances to threatened, endangered, candidate, and special-

status animal and plant species. Cumulative contributions from the Proposed Action would be largely due to noise and would be largely limited to the construction phases of the project. Some habitat would be temporarily removed during this phase and then restored through revegetation, while some would be permanently removed to accommodate project features. During the operational phase, no new habitat removal and very little noise disturbance would remain around the project components. Impacts on threatened, endangered, candidate, and special-status animal and plant species would be more significant than impacts on common species because population viability is already uncertain for special status species, but impacts from noise and human disturbances would be reduced through Lease Stipulations, And the Crown Castle proposed Project Design Features described in the Description of the Proposed Action. In addition, similar abundant habitat is found in the area and region, and reseeded of temporarily disturbed areas could re-establish habitat. Overall, the Proposed Action would have a negligible contribution to cumulative effects on special-status species within the analysis area.

Residual Impacts

No residual impacts are projected to occur from the proposed activities after construction activities are completed.

4.15.3.11 Travel/Transportation**Cumulative Impacts**

No cumulative or residual impacts are anticipated if the Proposed Action is implemented. Impacts to traffic and transportation would be temporary in nature, and would only occur during construction activities. Any repair activities associated with the project would be able to be achieved without affecting traffic flow in the project area.

Residual Impacts

No residual impacts are projected to occur from the proposed activities after construction activities are completed.

4.15.3.12 Vegetation**Cumulative Impacts**

Past and present actions have impacted vegetation through the removal of plant species and degradation of soil and vegetation. Impacts from past and present actions would likely continue under the reasonably foreseeable future actions. The Proposed Action would remove additional vegetation temporarily and over the long term. However, the impacts would be small. Additional impacts to vegetation could occur from expansion of existing activities as well. Furthermore, changes in climate could cause geographic shifts in vegetation communities into higher elevations and more northern latitudes. As these shifts occur, some habitats, such as grasslands, are expected to expand, while other habitats, such as alpine forests, are expected to contract or be displaced altogether. In addition, climate change is expected to reduce snowpack and rainfall throughout the Western US. This would increase the vegetation's susceptibility to wildfire. The Proposed Action would cumulatively contribute to vegetation removal and degradation. Overall, the Proposed Action would have a negligible contribution to cumulative effects on vegetation within the analysis area.

The Proposed Action, in conjunction with other projects, would result in cumulative impacts on native

vegetation communities, including the potential spread of noxious and/or invasive weeds with the potential to adversely affect the Project area and adjacent lands. The proposed ROW areas are adjacent to expanding residential developments. The combined effects of the following land uses have the potential to increase the rate at which the noxious and invasive weeds colonize adjacent BLM lands. The affects will be considered negligible if stipulations are met to identify, prevent, and treat the spread of noxious and or invasive species.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

4.15.3.13 Visual Resources

The visual resources within RRCNCA, including the Rainbow Mountain and La Madre wilderness areas, are a unique natural setting with open desert and limestone mountains dominated by sandstone cliffs. The Scenic Drive offers stunning views of the Spring Mountains, in particular, the conservation area's showcase: a set of sandstone peaks and walls called the Keystone Thrust. The walls are up to 3,000 feet high, and the highest point is La Madre Mountain, at 8,154 feet.

This dramatic setting provides vistas from Nevada State Route (S.R.) 159, it's overlooks, as well as the Calico Basin Community and surrounding areas along the 159 Corridor. The path of the Crown Castle Small Cell Network roughly parallels S.R. 159.

Management Considerations

To comply with regulations requiring protection of the scenic value of federal lands, the BLM has developed a Visual Resource Management (VRM) program. The BLM's VRM system protects visual resources by establishing criteria for the extent and manner in which change or development is allowed in an area. The program inventories and places BLM managed lands into one of four VRM classes based on the relative value of the visual resource. As stated in the BLM Handbook H-8400-6, Visual Resource Management, "The approved VRM objectives (classes) provide the visual management standards for the design and development of future projects and for rehabilitation of existing projects." The four VRM classes range from the most restrictive Class I for the most highly valued visual resources, to the least restrictive Class IV. The Rainbow Mountain and La Madre Wilderness Areas are managed as Class I.

The area of potential effect for the Proposed Action would be managed as Class II. Changes within Class II areas "should not be evident in the characteristic landscape. Contrasts are seen, but must not attract attention" (BLM 2005). The BLM Handbook H-8431-states the Class II objective as follows:

The objective to this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Distance Zones

Distance zones are divided into three classifications, and landscapes are evaluated based on the perceived visual quality from these zones. Foreground-middle ground is visible to the observer and sensitive to change and includes areas seen from the highways and viewing locations that are less than 3 to 5 miles away. Unauthorized parking along SR-159 can alter the scenic quality in the foreground-middle ground zone, especially on weekends.

The background zone includes areas that are visible beyond the foreground-middle ground zone but are less than 15 miles from the viewer. This background zone in the project area would include views from SR-159 toward the Spring Mountains, which form the horizon.

The seldom seen zone is anything further than 15 miles from the viewer. Because of the backdrop of the Spring Mountains, there are few seldom seen zones from SR-159, and none located along the proposed small cell network alignment.

Sensitivity Levels

Sensitivity levels are the measure of public concern for scenic quality. Because of the existing disturbance along the road, the area immediately adjacent to the existing SR-159 is considered medium sensitivity.

Areas west of SR-159 are considered high sensitivity because there are few man-made facilities along SR-159 to block the scenic views of the RRCNCA. While areas such as the Overlook, and the Visitor Center contain man-made structures, these structures are in place to enhance the visitor's experience by providing parking spaces and public facilities. The proposed project's poles and lines may be noticed along SR-159, but they will blend in with the surrounding terrain using an authorized color from the Visual Resource Management Color scheme (see Appendix C-Visual Simulations).

Cumulative Impacts

The Past and Present Actions described previously are expected to continue in addition to the Proposed Action. Visual impacts from the Proposed Action would be long-term due to the introduction of the Proposed Action components into the landscape. However, Proposed Action Components have been designed to be less intrusive in the current visual environment and blend more into the existing environment. Therefore, only minimal cumulative impacts on visual resources would occur.

Residual Impacts

Residual visual impacts from the Proposed Action would occur due to the introduction of the Proposed Action components into the landscape. Project components would be permanent and long term. However, Proposed Action components have been designed to be less intrusive in the current visual environment and blend more into the existing environment.

4.15.3.14 Water Resources

Cumulative Impacts

The potential for impacts from the past and present actions previously described would likely continue under the reasonably foreseeable future actions. Any such impacts would be minimized since all such activities are permitted and regulated by the BLM, the State of Nevada, Clark County, and the City of Las Vegas, and all operations must adhere to permit conditions. When combined with other current and potential future area activities, there would be an increased potential for impacts to water resources. Potential impacts to water resources due to the Proposed Action would be avoided or minimized through the use of BMPs and The Crown Castle proposed Project Design Features described in the Description of the Proposed Action. The Proposed Action would not have any temporary or long-term local impact on groundwater quality and water levels. No impacts to surface water would occur as a result of the Proposed Action. Because impacts from the Proposed Action would be temporary and local, any contribution to cumulative impacts would be minimal.

Residual Impacts

No residual impacts are projected to occur from the proposed activities.

----- *This page intentionally left blank* -----

5.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

5.1 Consultation and Coordination

Consultation was conducted with local Native American tribes to help assess impacts on Native American Traditional Cultural Properties. These interactions are detailed below in Table 5.1, List of Tribal Outreach, Contact and Consultation.

Table 5.1. List of Tribal Outreach, Contact, and Consultation (BLM to Provide)

2017	SHPO Fieldwork Authorization	Imitated by former SNDO Archeologist, Justin DeMaio.
February 5, 2020	Tribal Consultation Letter (Authored and Disseminated by Annette Neubert, Red Rock Canyon Archeologist)	Provided to the following Tribes: Chemehuevi Indian Tribe, Paiute Indian Tribe of Utah, Colorado River Indian Tribes, Twenty-Nine Palms Band of Mission Indians, Ely Shoshone Tribe, Fort Independence Paiute, Las Vegas Paiute, Kaibab Band of Paiutes, Fort Mojave Indian Tribe, San Juan Southern Paiute Tribe, Timbisha Shoshone Tribe, Moapa Band of Paiutes.
2020	Fieldwork results and Consultation Letter Response - Ms. Neubert.	<ul style="list-style-type: none"> No Historic Properties Affected per Section 106 No Consult with the State Historic Preservation Office (SHPO) required. There was no Tribal response to the February 5, 2020 Consultation Letter, so concurrence is assumed.

Table 5.2, List of Persons, Agencies and Organization Consulted, outlines consultations with additional agencies and individuals.

Table 5.2. List of Persons, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Rick Splawinski, Nevada Department of Transportation, District 1	Requested information regarding design features within Nevada DOT ROWs.	Nevada DOT provided link to Design Guidelines document.
Mario Bermudez, Clark County	Requested information regarding noise regulations for ROWs of the project falling within Clark County jurisdiction.	Clark County provided link to County noise ordinance. Project activities, provided they take place during daytime, would comply with the requirements of Clark County.
Bill Arent, City of Las Vegas	Requested information regarding noise regulations for ROWs of the	City of Las Vegas provided link to County noise ordinance.

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
	project falling within City of Las Vegas.	Project activities, provided they take place during daytime, would comply with the requirements of Clark County.

----- *This page intentionally left blank* -----

6.0 LIST OF PREPARERS

Table 6.1. List of BLM Preparers

Name	Title
Joanie J. Guerrero	Realty Specialist RRC/Sloan NCAs, Project Lead
Annette Neubert	Archaeologist
Boris Poff	Hydrologist
Corey Lange	Wildlife Biologist
Kathy August	Outdoor Recreation Planner
Lara Kobelt	Botanist
Lisa Christianson	Air Quality Specialist
Mary Ellis	Paleontologist
Connor Murphy	Geologist
Sean McEldery	Fuels Program Manager/Fire Planner and Weeds Management
Susan Farkas	Planning and Environmental Coordinator
Tarl Norman	Weeds Specialist

Table 6.2. Cooperating Agencies

Name	Agency
Rick Splawinski	Nevada Department of Transportation, District 1
Mario Bermudez	Clark County
Bill Arent	City of Las Vegas

Table 6.3. Third Party NEPA Consultant Team

Name	Title
Synthesis Planning	
Cord Hute	Principal Planner/Project Manager/Principal Biologist
Jennifer Hute	Document Review and Editing
Sophia Mitchell	Planner
Dan Hack	Maps and Graphics
Ray Kapahi	Air Resource Specialist
Jeff Monroe	Geologist
Shannon Peacock	Air Resource Specialist
David Brunzell (Cultural Subconsultant)	Cultural Specialist

----- This page intentionally left blank -----

7.0 REFERENCES

- BLM (Bureau of Land Management). 1986. Visual Resource Inventory (BLM Manual H-8410-1).
- _____. 2005a. Red Rock Canyon National Conservation Area (RRCNCA) Resource Management Plan.
- _____. 2005b. RRCNCA Resource Management Plan and Record of Decision.
- _____. 2006. Las Vegas Field Office Weed Plan.
- _____. 2008. BLM NEPA Handbook. Bureau of Land Management (BLM). 2008a. National Environmental Policy Act (BLM Handbook H-1790-1). January.
- _____. 2018a. Nevada Rangeland Management and Grazing. Internet website: <https://www.blm.gov/programs/natural-resources/rangeland-and-grazing/rangeland-health/nevada>. Accessed March 8, 2018.
- _____. 2018b. Red Rock Herd Management Area, Clark County, Nevada. Internet website: <https://www.blm.gov/programs/wild-horse-and-burro/herd-management/herd-management-areas/nevada/red-rock-hma>. Accessed March 8, 2018.
- _____. 2018c. Enviromapper for Envirofacts. Internet website: Accessed online at <https://www.epa.gov/emefdata/em4ef.home>. Accessed on March 8, 2018.
- _____. 2018d. Nevada Rangeland Management and Grazing. Internet website: <https://www.blm.gov/programs/natural-resources/rangeland-and-grazing/rangeland-health/nevada>. Accessed March, 8, 2018.
- _____. 2018e. Weather and Climate of Red Rock Canyon. Internet website: <https://www.blm.gov/sites/blm.gov/files/uploads/Nevada-Red%20Rock%20Canyon-Weather%20Brochure.pdf> . Accessed April 5, 2018
- _____. 2018f. BLM NV Designated Areas of Critical Environmental Concern Polygons. Data Set/Shape File. <https://navigator.blm.gov/data?keyword=95c8701bb1d92638>
- City of Las Vegas. 2017. City of Las Vegas Planned Streets and Highways Map. Internet website: <https://www.lasvegasnevada.gov/cs/groups/public/documents/document/dhn0/mday/~edisp/tst002909.pdf>. Accessed April 11, 2018.
- Clark County. 2013. Northwest Clark County Land Use Plan. Accessed online at <http://www.clarkcountynv.gov/comprehensive-planning/land-use/Documents/NWLandUsePlan.pdf>. Accessed April 3, 2018.
- Environmental Protection Agency. 2011. Climate Change, Basic Information. Internet Web site: <http://www.epa.gov/climatechange/basicinfo.html>.

LVGEA (Las Vegas Global Economic Alliance). 2018. Internet Web site: <https://www.lvgea.org/market-information/major-employers>. Accessed March 19, 2018

Las Vegas Sun. 2005. Article: Red Rock Canyon Loop Road May Remain Closed for Another Week. Internet website: <https://lasvegassun.com/news/2005/jul/25/red-rock-canyon-loop-road-may-remain-closed-for-an/>. Viewed April 3, 2018.

Los Angeles Times. 2013. Article: Las Vegas: Wildlife forces closure of hiking trail in Red Rock Canyon. <http://articles.latimes.com/2013/jul/11/news/la-trb-las-vegas-wildfire-forces-closes-red-rock-hiking-trails-20130711>. Viewed April 3, 2018.

Nevada Department of Agriculture. 2008. Noxious Weed List. http://agri.nv.gov/nwac/PLANT_NoxWeedList.htm. Accessed March 19, 2018.

NDETR (Nevada Department of Employment, Training and Rehabilitation Internet Web site: <http://nevadaworkforce.com/top-employers>. Accessed March 19, 2018

NDWR (Nevada Division of Water Resources). 2018. Designated Groundwater Basins of Nevada Map. http://water.nv.gov/mapping/maps/designated_basinmap.pdf. Accessed April 3, 2018.

NNHP (Nevada Natural Heritage Program). 2016. Nevada Natural Heritage Program Database. Electronic Database. Query of database requested on July 1, 2016, and data received on July 15, 2016.

Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey Database. Accessed September 9, 2018. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

US Census Bureau. 2018a. QuickFacts Clark County, Nevada. <https://www.census.gov/quickfacts/fact/table/clarkcountynevada/PST045216>. Accessed on March 19, 2018

US Census Bureau. 2018b. QuickFacts Las Vegas, Nevada. Internet Web Site: <https://www.census.gov/quickfacts/fact/table/lasvegascitynevada/PST045217>. Accessed on March 19, 2018

US Census Bureau. 2018c. QuickFacts Nevada. Internet Web Site: <https://www.census.gov/quickfacts/NV>. Accessed on March 19, 2018

USFWS (US Fish and Wildlife Service). 2018. National Scenic and Wild Rivers System. Internet. Web site: <https://www.rivers.gov/nevada.php>. Accessed on March 8, 2018.

USFWS (United States Fish and Wildlife Service). 2016. Website Address: http://www.fws.gov/nevada/protected_species/species_by_county.html.

US Forest Service. 2011. Climate Change Primer. Internet Web site: <http://www.fs.fed.us/ccrc/primers/climate-change-primer.shtml>.

USGS (United States Geologic Survey). 2004. Mineral Resources Assessment Areas in Clark and Nye Counties. Nevada – a progress report. Website address: <https://pubs.usgs.gov/of/2004/1339/of2004-1339.pdf>. Accessed April 5, 2018.

World Health Organization. 1999. Guidelines for Community Noise. Geneva.

----- This page intentionally left blank -----

Appendix A

Stipulations for Crown Castle – Small Cell Network Project

NEPA #: DOI-BLM-NV-S020–2020–0005–EA

Case File #: N-95127

Appendix A – Stipulations

The following stipulations must be implemented unless the stipulation is not applicable to your proposed action. Those stipulations that include “if applicable, if used, or if constructed” are to be implemented if the proposed action includes that activity or design.

1. General Resource Stipulations

- 1.1. The Holder shall comply with all applicable local, state, and federal laws and regulations for the protection of resources and the environment, to include but not limited to air, cultural, hazmat, soil, vegetation, water, wildlife.
- 1.2. As part of project reclamation, the Holder will be responsible for ensuring that any boreholes, wells, or other openings in the ground are backfilled and properly covered, according to the Nevada Regulatory Statutes.
- 1.3. The Holder shall remove from public land and properly dispose of any and all trash, litter, debris, waste, excess materials, including flagging and signs, or other substances and materials resulting from the use under this authorization. All trash and food items shall be promptly contained within closed, raven-proof containers.
- 1.4. The painting of rocks or the establishment of permanent markers or improvements is prohibited.
- 1.5. Unless expressly stated, the permit does not create an exclusive right of use of an area by the Permittee. The Permittee shall not interfere with other valid uses of the Federal land by other users. The United States reserves the right to use any part of the area for any purpose.
- 1.6. The Permittee or Permittee’s representative may not assign, contract or sublease any portion of the permit authorization or interest therein, directly or indirectly, voluntarily or involuntarily. However, contracting of equipment or services may be approved by the BLM Authorized Officer in advance, if necessary, to supplement a Permittee’s operations. Such contracting should not constitute more than half the required equipment or services. If equipment or services are contracted, the Permittee shall continue to be responsible for compliance with all stipulations and conditions of the permit.
- 1.7. The Permittee cannot, unless specifically authorized, erect, construct, or place any building, structure, or other fixture on public lands. Upon leaving, the lands must be restored as nearly as possible to pre-existing conditions.
- 1.8. **The Permittee must present or display a copy of the permit to a BLM Authorized Officer’s representative, or law enforcement personnel upon request.** If required, the Permittee must display a copy of the permit or other identification tag on equipment used during the period of authorized use.
- 1.9. The BLM Authorized Officer, or other duly authorized representative of the BLM, may examine any of the records or other documents related to the permit, the Permittee or the Permittee’s operator, employee, or agent for up to 3 years after the expiration of the permit.
- 1.10. The Permittee shall notify the BLM Authorized Officer of any accident that occurs while involved in activities authorized by this permit which results in: death, personal injury requiring hospitalization or emergency evacuation, or in property damage greater than \$2,500. Reports should be submitted within 24 hours in the case of death or injury, or 10 days in accidents involving property damage.

2. Cultural and Paleontological Resources

- 2.1. It is illegal to collect or disturb archaeological materials on public lands without a permit issued from the BLM. These permits are only granted to qualified archaeologists associated with institutions or contracting firms. No fossils may be collected within the boundaries of Red Rock Canyon NCA. Violators will be subject to criminal penalties.
- 2.2. Permittee is responsible for obtaining the information necessary to comply with the above stipulations.
- 2.3. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the Holder, or any person working on his behalf on public or federal lands shall be immediately reported to the Authorized Officer. Holder shall immediately suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. The Holder will make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. In some cases, this may delay activity at the site until the discovery may be recovered, or the project is modified to avoid impacting the find.
- 2.4. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or paleontological values. Any decision regarding suitable mitigation measures will be made by the Authorized Officer after consulting with the Holder. The Holder will be responsible for the cost of evaluation. Holder shall be responsible for the resultant mitigation costs.

3. Fish and Wildlife, Excluding Federally Listed Species

- 3.1. Permittee shall not damage, collect, or introduce plants or animals at any location within Red Rock Canyon NCA without permission from the Authorizing officer.
- 3.2. The Permittee and participants will not harass, feed or collect wildlife or plants while in Red Rock Canyon NCA.
- 3.3. If artificial water sources are used, wildlife escape ramps must be installed. Ensure escape ramps are properly designed and installed to allow wildlife to exit in the event an animal falls into the water source.
- 3.4. Project materials, supplies or equipment where wildlife could temporarily hide will be inspected prior to moving them to reduce the potential for injury to wildlife. Materials, supplies and equipment that cannot be inspected, or from which wildlife cannot escape or be removed, will be covered or otherwise made secure from wildlife intrusion or entrapment at the end of each work day.
- 3.5. If any Gila monster are encountered during project construction, they must be reported immediately to the Nevada Division of Wildlife at (702) 486-5127.

4. Fuels and Fire

- 4.1. Compliance with fire restrictions is mandatory while fire restrictions are in effect (43 CFR 9212). Fire restrictions are generally enacted May through October. Fire restriction orders are available for review at BLM district offices and on the BLM website.
- 4.2. The use of standard fire prevention measures should be practiced at all times (43 CFR 2805.12). Conditions that support wildfires can occur any time of the year in Southern Nevada.
- 4.3. The Holder shall immediately report fires to 911 or (702) 631-2350 and make all accommodations to allow immediate safe entry of firefighting apparatus and personnel.

- 4.4. An Origin and Cause Investigation will be carried out on any human caused fire by BLM law enforcement or their designated representative. To minimize disturbance of potential evidence located at the fire scene, the applicant/proponent shall properly handle and preserve evidence in coordination with the BLM. The BLM shall pursue cost recovery for all costs and damages incurred from human-caused fires on BLM lands when the responsible party(s) has been identified and evidence of legal liability or intent exists. Legal liability includes, but is not limited to, negligence and strict liability (including statutory and contractual liability), products liability, etc.

5. Hazardous Materials

- 5.1. If hazardous materials/substances are used or present within the authorized area, the Holder shall immediately notify the Authorized Officer of any release (leaks, spills, etc.) of hazardous substances, toxic substances, or hazardous waste. As required by law, Holder shall have responsibility for and shall take all action(s) necessary to respond to and fully remediate releases (leaks, spills, etc.) within the authorized area. A copy of any report required or requested by any federal, state, or local government agency as a result of a reportable release or spill of any hazardous substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved federal, state, or local government agency.

6. Human Health and Safety

- 6.1. The Permittee must assume responsibility for inspecting the permitted area for any existing or new hazardous conditions, e.g., trail and route conditions, landslides, avalanches, rocks, changing water or weather conditions, falling limbs or trees, submerged objects, hazardous wildlife, or other hazards that present risks for which the Permittee assumes responsibility.
- 6.2. Permittee shall place signs and other warning devices as deemed necessary by the BLM Authorized Officer to warn the public of the action taking place.
- 6.3. The Permittee shall insure that the first aid services are provided to insure that any accident victim may be located, treated, and evacuated as needed. A reliable communication system shall be sufficient to provide immediate contact for the first aid provider (EMT) to local emergency dispatch centers.

7. Invasive Species and Noxious Weeds

- 7.1. The Holder will keep their project area free of state-listed noxious weeds, such as Sahara mustard (*Brassica tournefortii*), for the life of the project. The Holder shall perform annual monitoring for invasive species/noxious weeds. Any detections of noxious weeds should be reported to the SNDO Weed Management Specialist immediately (702-515-5000) to determine best course for treatment.
- 7.2. The use of pesticide treatment requires the Holder to coordinate with the BLM SNDO weed management specialist (702-515-5000) and prepare, submit, obtain, and maintain a pesticide use proposal (PUP) to utilize pesticides for project activities.
- 7.3. In order to reduce the accidental spread of noxious weeds, the Holder and any contractors shall avoid or minimize all types of travel through a state listed noxious weed-infested areas that can be carried to the project area. In order to minimize the threat of spreading noxious weeds project-related equipment (i.e. undercarriages and wheel wells) should be cleaned of all mud, dirt, and plant parts before moving into relatively weed-free areas or out of relatively weed-infested areas. Project workers shall inspect, remove, and dispose of weed seed and plant parts

- found on their clothing and personal equipment, bag the product, and dispose of it in a dumpster. If you have questions, consult with the BLM SNDO noxious weed coordinator.
- 7.4. During permitted activities the Holder shall:
- 7.4.1. Review the annual weed inventory prior to any ground disturbance.
 - 7.4.2. Ensure that all equipment and personal gear is clean and free of soil and vegetation before arrival on site. This includes ensuring vehicles and equipment be washed/ cleaned before field use and should be inspected before leaving the field for excess soil and vegetation.
 - 7.4.3. Locate equipment storage, machine and vehicle parking or any other area needed for the temporary placement of people, machinery and supplies in areas that are relatively weed-free.
 - 7.4.4. Begin activities in weed free areas whenever feasible before operating in weed-infested areas.
 - 7.4.5. Avoid or minimize all types of travel through weed-infested areas or restrict major activities to periods of time when the spread of seed or plant parts are least likely.
 - 7.4.6. Limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed.
 - 7.4.7. Report weed populations they encounter to help BLM monitor and protect the resources. Education on weed identification can be gained from the Las Vegas office of the University of Nevada Cooperative Extension.
- 7.5. If landscaping is part of the project design, the Holder will ensure that landscaping does not contain state-listed noxious weeds, such as fountaingrass (*Pennisetum setaceum*).

8. Migratory Birds

- 8.1. Projects that require ground disturbance or actions that could affect nesting birds, should try to be scheduled outside of the bird breeding season. Breeding season in the SNDO generally occurs from February 15 to August 31. If a project cannot be schedule outside of those dates, a qualified biologist may be required to conduct a survey for nesting birds prior to commencement of activities, as determined by BLM. If active nests are found, methods to reduce project impacts to nesting birds will be developed in coordination with the BLM, such as an appropriately sized buffer area must be established and maintained until the young birds fledge. If feasible, the buffer area should connect to suitable, undisturbed habitat. As the above dates are a general guideline, any active nests that are observed outside this range, must be avoided as described above.
- 8.2. Any infrastructure for projects will be designed and constructed in a manner that does not allow open pipes that birds or other wildlife could be trapped in. This includes fencing, gates, or other materials with open holes. All open pipes will be capped or secured so that wildlife cannot access.
- 8.3. If lighting is installed on buildings or required by the FAA, lighting on buildings should be down-shielded and those structures/towers required by FAA to have lighting installed, should have flashing lights with the minimum intensity required by the FAA to prevent migratory bird collisions.
- 8.4. If project involves power lines and/or power line posts, the Holder shall follow Avian Power Line Interaction Committee (APLIC) guidelines (Suggested Practices for Avian Protection on Power Lines (2006) and Reducing Avian Collisions with Power Lines (2012)) to reduce this risk through facility design and comply with MBTA and other federal wildlife laws, due to

potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines.

- 8.5. If guy wires are used on structures (including power line posts and communication towers) they must be marked with bird diverters so they are visible to prevent injury/mortality to birds through collision.

9. Mineral Resources

- 9.1. If construction activities produce excess mineral materials from within the boundaries of the Proposed Action, the mineral materials must be used within the boundaries of the Proposed Action or stockpiled within the boundaries of the Proposed Action for future disposal by the BLM.
- 9.2. If construction activities require that excess mineral materials be exported from within the boundaries of the Proposed Action as they are generated, then written authorization, a mineral material sales contract, a free-use permit, etc. must be obtained from the BLM by the Holder prior to exporting the excess mineral materials from within the boundaries of the Proposed Action.
- 9.3. If mineral materials are to be stockpiled on site for a future disposal, specific BLM use authorization in the form of a written authorization, mineral material sales contract, free-use permit, etc. must be obtained from the BLM prior to exporting the excess mineral materials from within the boundaries of the Proposed Action.

10. Recreation

- 10.1. Unless expressly stated, a land use authorization does not create an exclusive right of use of an area by the holder. The holder shall not interfere with other valid uses of the federal land by other users, such as casual recreationists.

11. Survey Monuments

- 11.1. Holder shall protect all survey monuments found within the authorization area. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coast and Geodetic Survey benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. If any of the above are to be disturbed during operations, the Holder shall secure the services of a Professional Land Surveyor or Bureau cadastral surveyor to perpetuate the disturbed monuments and references using surveying procedures found in the Manual of Instructions for the Survey of the Public Lands of the United States and Nevada Revised Statutes, Chapter 329, Perpetuation of Corners. The Holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the Bureau cadastral surveyors or other federal surveyors are used to restore the disturbed survey monuments, the Holder shall be responsible for the survey cost.

12. Threatened, Endangered or Candidate Animal Species

- 12.1. Compliance with the special stipulations below will help to ensure desert tortoises are not impacted:
 - 12.1.1. A speed limit of 25 miles per hour shall be required for all vehicles travelling on existing roads.

- 12.1.2. Should a desert tortoise enter the area of activity, all activity shall cease until such time the animal leaves the area of its own accord.
- 12.1.3. All drivers must check underneath vehicles and equipment before moving to ensure no tortoise has taken cover underneath parked vehicles.
- 12.2. The Holder will comply with the terms and conditions of the Programmatic Biological Opinion 1-5-04-F-526 with informal concurrence from the USFWS File No. 08ENS00-2020-F-0115 for this project. The Biological Opinion is on file at the Bureau of Land Management, Southern Nevada District Office. The terms and conditions are in Appendix D.

13. Transportation/Travel

- 13.1. All vehicle parking will be limited to the designated parking areas.
- 13.2. All vehicles will be limited to designated roads. Motorized cross-country travel is not authorized.
- 13.3. Parking overnight or after hours is not authorized.

14. Wild Horse and Burro

- 14.1. The RRCNCA is found within the Red Rock Herd Management Area (HMA). Harassment, including touching, feeding, watering, or approaching wild horses or burros is prohibited.
- 14.2. If wild horse and/or burro are encountered in or near the authorized area do not feed, harass, or otherwise interact with the animal. Report sick or injured animals, or violations to animals to the BLM immediately.

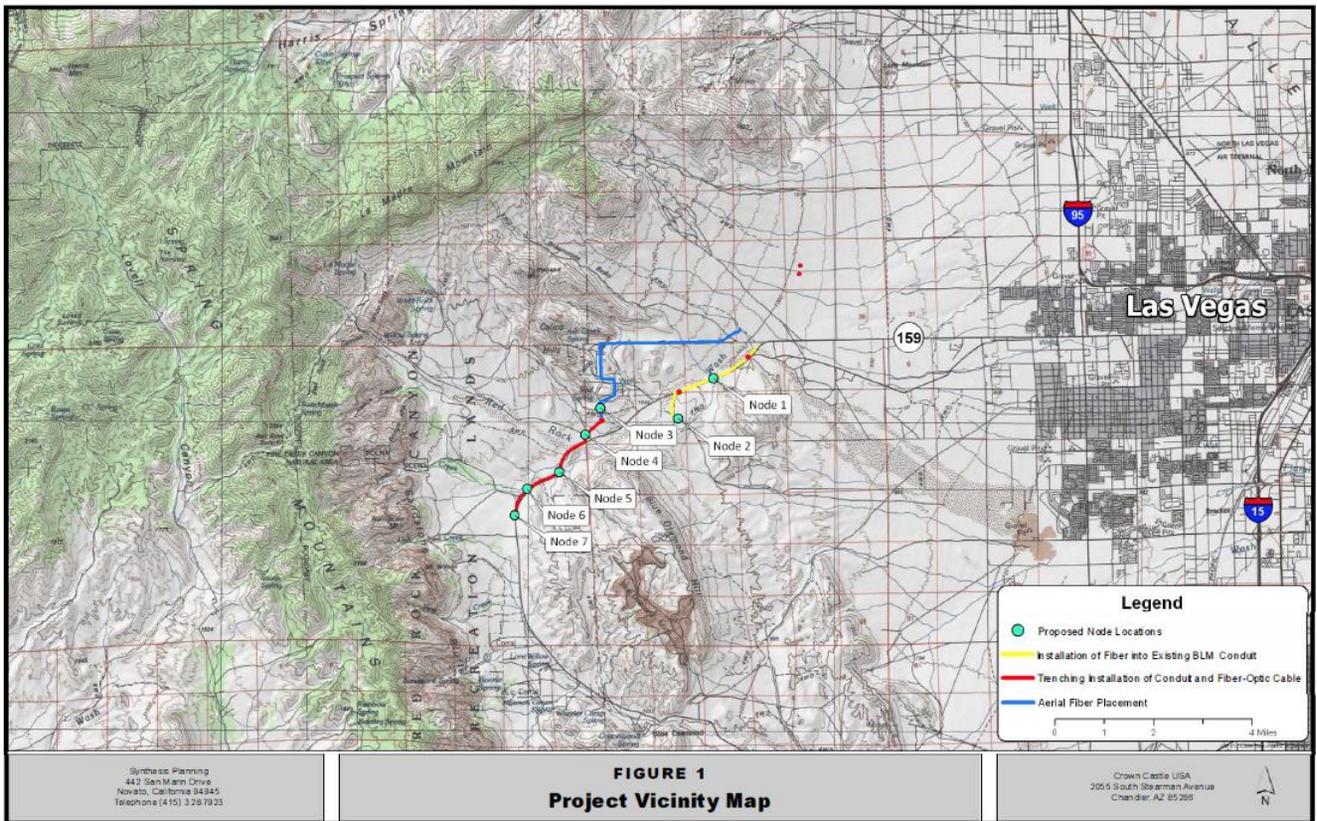
----- This page intentionally left blank -----

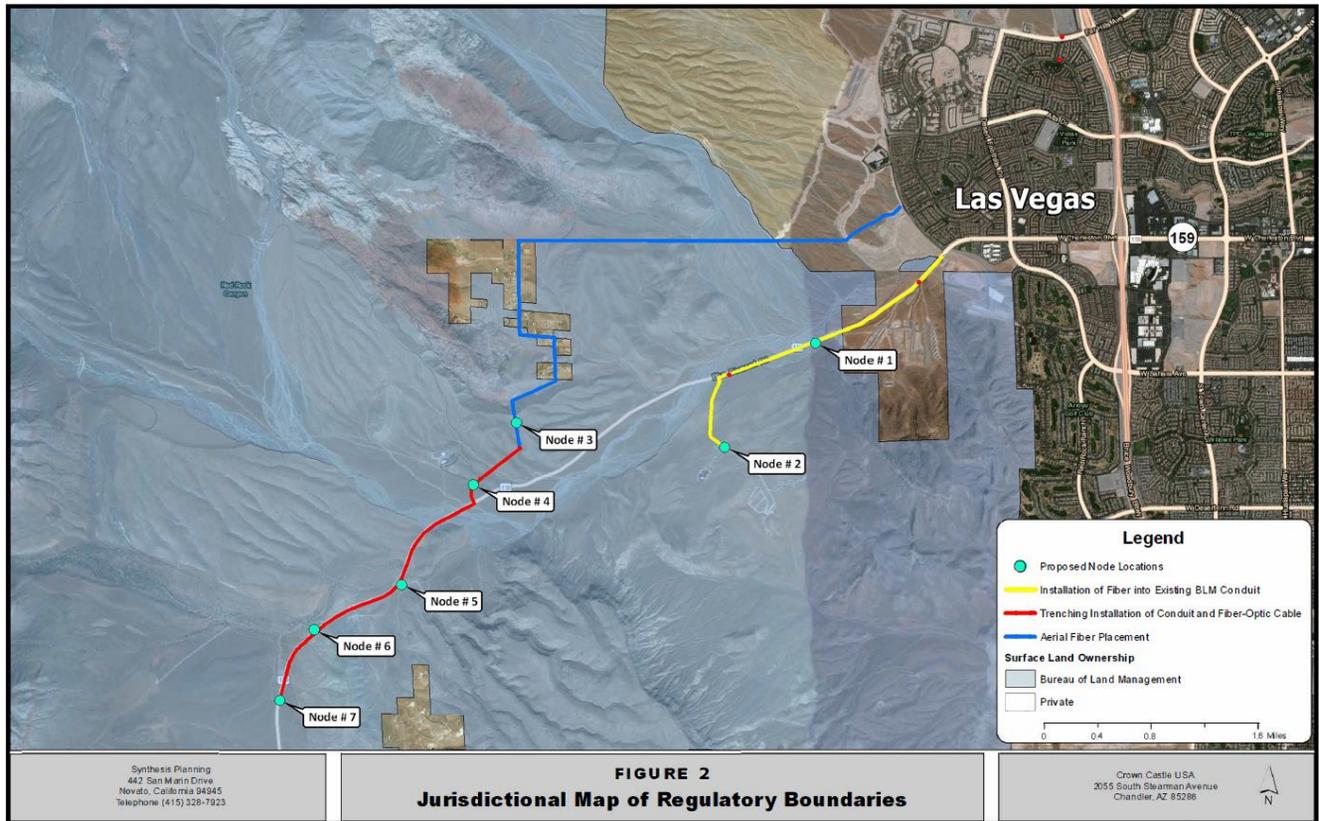
Appendix B

Figures/Maps for Crown Castle – Small Cell Network Project

NEPA #: DOI-BLM-NV-S020-2020-0005-EA

Case File #: N-95127







----- *This page intentionally left blank* -----

Appendix C

Visual Simulations for Crown Castle – Small Cell Network Project

NEPA #: DOI-BLM-NV-S020–2020–0005–EA

Case File #: N-95127



RED ROCK CANYON SITE RR01

NEVADA STATE HIGHWAY 159

NEW 30' (TOTAL HEIGHT) METAL POLE WITH TOP ANTENNA
CONCEALMENT SHROUD MEASURING 72"H x 24"W
SEPARATE EQUIPMENT CABINET WITH FAUX ROCK CONCEALMENT
SHROUD 48"H x 48"W x 48"D



AERIAL MAP



EXISTING



PROPOSED



RED ROCK CANYON SITE RR02

MOENKOPI ROAD & FIRE
DEPARTMENT ACCESS ROAD

NEW 30' (TOTAL HEIGHT) METAL POLE WITH TOP ANTENNA
CONCEALMENT SHROUD MEASURING 72"H x 24"W
SEPARATE EQUIPMENT CABINET WITH FAUX ROCK
CONCEALMENT SHROUD 48"H x 48"W x 48"D



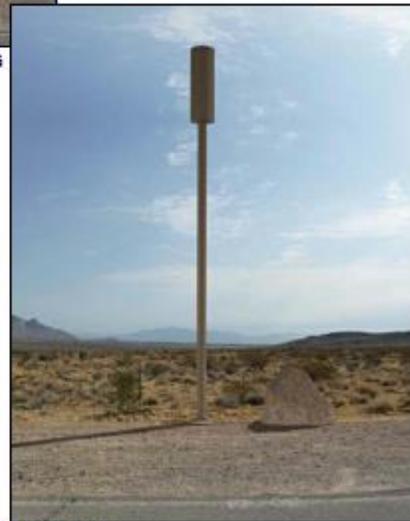
AERIAL MAP



EXISTING



VIEW FROM HIGHWAY



PROPOSED



RED ROCK CANYON SITE RR03

0.6 MILES NE OF RED ROCK VISITOR CENTER

EXISTING 29' (TOTAL HEIGHT) WOOD UTILITY POLE WITH INTERMEDIATE MOUNT ANTENNAS MEASURING 24" H. POLE-MOUNTED EQUIPMENT CABINET MEASURING 36" H x 20" W x 7" D



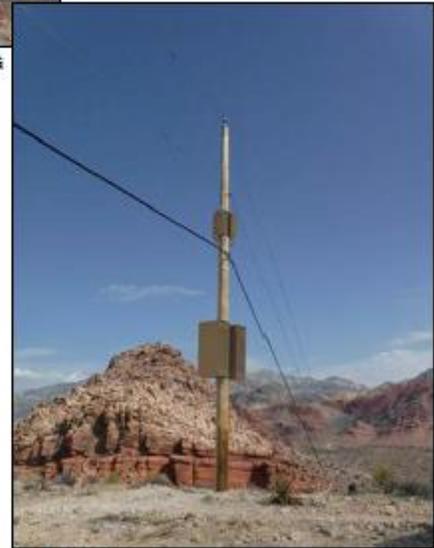
AERIAL MAP



VIEW FROM HIGHWAY



EXISTING



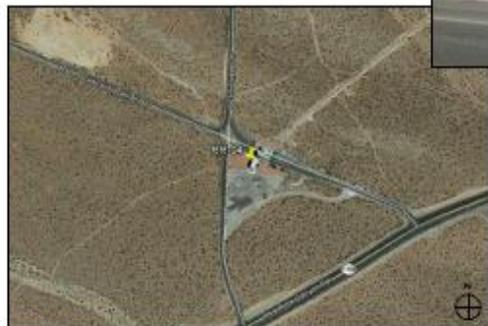
PROPOSED



RED ROCK CANYON SITE RR04

RED ROCK VISITOR CENTER ROAD & SCENIC LOOP DRIVE

NEW 30' (TOTAL HEIGHT) METAL POLE WITH TOP ANTENNA CONCEALMENT 5" ROUND MEASURING 72" H x 24" W SEPARATE EQUIPMENT CABINET WITH FAUX ROCK CONCEALMENT 5" ROUND 48" H x 48" W x 48" D



AERIAL MAP



VIEW FROM HIGHWAY



EXISTING



PROPOSED



RED ROCK CANYON SITE RR05

HIGHWAY 159 & RED ROCK CANYON STABLES ROAD

NEW 30' (TOTAL HEIGHT) WOOD POLE WITH TOP ANTENNA
CONCEALMENT SHROUD MEASURING 72"H x 24"W
SEPARATE EQUIPMENT CABINET WITH FAUX ROCK
CONCEALMENT SHROUD 48"H x 48"W x 48"D



VIEW FROM HIGHWAY



EXISTING



PROPOSED



AERIAL MAP



RED ROCK CANYON SITE RR06

NEVADA STATE HIGHWAY 159

NEW 30' (TOTAL HEIGHT) METAL LIGHT POLE WITH TOP ANTENNA
CONCEALMENT SHROUD MEASURING 72"H x 24"W
SEPARATE EQUIPMENT CABINET WITH FAUX ROCK
CONCEALMENT SHROUD 48"H x 48"W x 48"D



EXISTING



PROPOSED



AERIAL MAP



RED ROCK CANYON SITE RR07

NEVADA STATE HIGHWAY 159

NEW 30' (TOTAL HEIGHT) METAL POLE WITH TOP ANTENNA
CONCEALMENT SHROUD MEASURING 72"H x 24"W
SEPARATE EQUIPMENT CABINET WITH FAUX ROCK CONCEALMENT
SHROUD 48"H x 48"W x 46"D



AERIAL MAP



EXISTING



PROPOSED

----- This page intentionally left blank -----

Appendix D

Biological Report for Crown Castle – Small Cell Network Project

NEPA #: DOI-BLM-NV-S020–2020–0005–EA

Case File #: N-95127

08ENVS00-2020-F-0115 7 and 1-5-04-F-526**Habitat Description and Survey Summary and Results**

The project area can be described as poor-quality tortoise habitat as evidenced by previous tortoise surveys completed throughout the area. Red Rock Canyon National Conservation Area does lack more recent survey data but it is assumed to support a low density of tortoises due to low burrow population, high impacts from public use (e.g., hiking, rock climbing, and horseback riding) as well as increases in elevations that are above the tortoise's range. The project is situated at an elevation between approximately 3,500 and 4,700 feet. That being said, there are tortoises that are known to hang around the fee station. Additionally, there are tortoises in the Calico Basin area that the Nevada Department of Wildlife is tracking with telemetry; therefore, it is possible that tortoises may be present in the project area.

EFFECTS OF THE ACTION

Surface disturbance related to the construction of the project would result in the temporary and permanent removal of vegetation within the project area. Disturbance caused by clearing, grubbing, grading, and trenching would result in the total loss of up to approximately 0.08 acre of creosote-bursage scrub, desert wash, and Mojave mixed scrub vegetation types. Total new disturbance would consist of approximately 0.077 acre of temporary impact and 0.003 acre of permanent impacts. This estimate incorporates maximum levels of disturbance for the proposed improvements. The vegetation that would be affected by the project is represented throughout the project area; impacts would be minor when considered in this larger context. Additionally, there is 1.274 acres of previous disturbance that was completed under a previous grant for a ROW. According to the PBO, new disturbance less than 0.25 acre does not require remuneration fees; therefore, this project would not pay a fee.

It was determined that a survey prior to this project was not needed because of the small footprint, the minimal amount of disturbance, and the presence of an Authorized Desert Tortoise Biologist (ADTB) at each active work location to avoid and minimize take. No tortoises are expected to be impacted by project construction because of the low likelihood of a desert tortoise being found within the work area and adherence to minimization measures. The project would not impact any desert tortoise critical habitat.

PROPOSED MINIMIZATION MEASURES

1. **Speed limit:** Within Clark County, the speed limit is 25 miles-per-hour on unposted County roads; this speed will be established for all activities at all times unless otherwise designated.
2. **Vehicles:** All project/event-related individuals shall check underneath stationary vehicles before moving them.
3. **Vehicle traffic:** Shall be restricted to existing access roads, unless otherwise authorized by BLM and the Service.
4. **Litter-control:** Will be implemented and enforced by the project proponent or BLM. Trash containers shall remain covered, must be raven-proof, and emptied frequently enough to prevent overflow of materials. Trash, litter, project debris, etc. shall be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
5. **Tortoise mortality/injury:** BLM wildlife staff (702/515-5000) and the Service (702/515-5230) must be notified of any desert tortoise death or injury due to the project implementation by close of business on the following work day. In addition, the Service's Division of Law Enforcement shall be notified in accordance with the reporting requirements of this biological opinion.
6. **Tortoise activity:** The period of greatest tortoise activity is generally defined as March 1 – Oct 31. However, unseasonably warm weather and/or precipitation outside this period may result in tortoise

activity, particularly by hatchling and juvenile tortoise, and thus warrant adherence to requirements established for periods of greater activity. Similarly, BLM may determine that additional measures are appropriate for projects planned for the end or beginning of either period if conditions are suitable for desert tortoises to be active.

7. Education Program: A BLM/Service-approved biologist (as defined below) shall present a tortoise education program to all foremen, workers, permittees and other employees or participants involved on projects covered under this opinion. The program will consist of either a presentation or fact sheet as determined by project level consultation between BLM and the Service. The program or fact sheet will include information on the life history of the desert tortoise, legal protection for desert tortoises, penalties for violations of Federal and State laws, general tortoise activity patterns, reporting requirements, measures to protect tortoises, terms and conditions of the biological opinion, and personal measures employees can take to promote the conservation of desert tortoises. The definition of "take" will also be explained. Workers and project associates will be encouraged to carpool to and from the project sites. Specific and detailed instructions will be provided on the proper techniques to capture and move tortoises that appear onsite if appropriate, in accordance with Service-approved protocol. Currently, the Service-approved protocol is Desert Tortoise Council 1994, revised 1999.

8. Biologist approval: BLM and Service wildlife staff must approve the biologists to be used to implement the terms and conditions of the biological opinion, or permit issued by BLM. Any biologist and/or firm not previously approved must submit a statement of qualifications in the Service-developed format and be approved by the wildlife staff before authorized to represent BLM in meeting compliance with the terms and conditions of the biological opinion. Other personnel may assist with implementing conservation measures, but must be under direct field supervision by the authorized biologist.

9. Biologist qualifications: In accordance with Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise (Service 1992), an authorized desert tortoise biologist should possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields as determined by BLM and the Service. The biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises and tortoise sign, which should include a minimum of 60 days field experience. All tortoise biologists shall comply with the Service-approved handling protocol (Desert Tortoise Council 1994, revised 1999). In addition, the biologist shall have the ability to recognize and accurately record survey results and must be familiar with the terms and conditions of the biological opinion that resulted from project level consultation between BLM and the Service.

10. Tortoise in harms way: If a tortoise is found within the project/activity site in harms way, all potentially harmful activity shall cease until the tortoise moves or is moved out of harm's way by an authorized biologist. If a desert tortoise is in imminent danger, the tortoise shall be moved out of harms way and on to adjacent BLM land, using techniques described in the tortoise education program.

11. Moving tortoises: Tortoises that are moved offsite and released into undisturbed habitat on public land, must be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibernaculum in which it was found, or in an artificially constructed burrow in accordance with the tortoise handling protocol. Tortoises encountered shall be treated in a manner consistent with the appropriate measures in this biological opinion.

12. Permits: All appropriate State and Federal permits, including NDOW and Service permits for handling desert tortoises or their parts, must be acquired by the tortoise biologists or other personnel before project initiation and prior to handling any desert tortoise or their parts, or conducting any activity requiring a permit.

13. Project oversight: A BLM representative(s) shall be designated who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this biological opinion. The designated representative shall provide coordination among the permittee, project proponent, BLM, and the Service.

14. **Desert tortoise burrows:** Will be avoided whenever possible; if not, the burrow will be cleared in accordance with the measures set forth in this biological opinion.
15. **Heat stress:** Desert tortoises encountered experiencing heat stress will be placed in a tub, by an authorized tortoise biologist, with one inch of 76-90°F water for at least 20 minutes or until heat stress symptoms are no longer evident.
16. **Temperature restrictions:** Desert tortoises shall be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises shall be kept shaded at all times until it is safe to release them. No desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95°F (35°C). Ambient air temperature shall be measured in the shade, protected from wind, at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise shall be captured if the ambient air temperature is anticipated to exceed 95°F (35°C) before handling and relocation can be completed. If the ambient air temperature exceeds 95°F (35°C) during handling or processing, desert tortoises shall be kept shaded in an environment that does not exceed 95°F (35°C), and the animals shall not be released until ambient air temperature declines to below 95°F (35°C).
17. **Reporting:** The project proponent, permittee, or project lead if an internal action, must submit a document to BLM wildlife biologist within 30 days of completion of the project showing the number of acres disturbed, remuneration fees paid, and number of tortoises observed or taken, which includes capture and displacement, killed, injured, or harassed by other means, during implementation of programmatic actions. 08ENVS00-2020-F-0115 9 and 1-5-04-F-526
18. **Previous disturbance:** Overnight parking and storage of equipment and materials, including stockpiling, shall be within previously disturbed areas or within areas cleared by a tortoise biologist to minimize habitat destruction.
19. **Project boundaries:** Project activity areas will be clearly marked or flagged at the outer boundaries before the onset of construction. All activities shall be confined to designated areas. When new access routes have been identified for development, routes will be flagged by the tortoise biologist prior to surface disturbance.

Proposed Measures for Actions Involving Ground Disturbance:

20. **Blading of vegetation:** Will occur only to the extent necessary and shall be limited to areas designated for that purpose by BLM or tortoise biologist.
21. **Fees:** Prior to issuance of authorization, and prior to any surface-disturbing activity associated with the proposed project, the project proponent shall pay a remuneration fee of \$923 for each acre of surface disturbance, if paid prior to March 1, 2021. This rate will be indexed annually for inflation based on the Bureau of Labor Statistics Consumer Price index for All Urban Consumers (CPI-U). Information on the CPI-U can be found on the internet at <http://stats.bls.gov/news.release/cpi.nws.htm>. An exception is made if the disturbance for the project is less than 0.25 acre of disturbance or for activities that result in a long-term benefit for the species (e.g., trail realignment to minimize habitat impacts). Fees shall be submitted as directed in the attached form (Attachment C).
22. **Notification:** The project applicant/BLM lead shall notify BLM wildlife staff at least 10 days before initiation of the project. Notification shall be made to BLM's wildlife staff representative responsible for NEPA review of the project at (702) 515-5000.
23. **Clearance:** All project areas, fence lines, staging areas, etc. will be cleared of tortoises by an authorized biologist immediately before the start of ground disturbance using 100-percent coverage survey techniques. During the tortoise active season, an authorized tortoise biologist will be onsite during fence construction to ensure that no tortoises are harmed. Burrows found outside the area to be disturbed will be flagged and avoided. Clearance will involve excavating nests; relocating eggs; flagging avoidable burrows; collapsing

unavoidable; unoccupied burrows; and relocating tortoises in accordance with the Service-approved protocol for handling desert tortoises (Desert Tortoise Council 1994, revised 1999). If disturbance is planned to occur during a period when tortoise are not anticipated to be active, surveys may be conducted earlier as determined during project-specific consultation.

During Ground Disturbing Activities:

24. **On-site biologist:** Unless the area has been fenced and cleared, or the Service and BLM have determined an onsite biologist is not necessary through project-level consultation, the project will require an authorized biologist(s) onsite for project construction during the period of greatest tortoise activity (e.g., March 1 through October 31), and on-call at other times.

Following Termination of Ground Disturbing Activities:

25. **Restoration:** Temporary disturbance areas will be restored in accordance with the restoration protocols for the project.

Proposed Measures for Activities that Involve Maintenance or Modification of Existing Sites and Limited to Existing Disturbed Areas Adjacent to Tortoise Habitat:

26. **Clearance- barren/unsuitable areas:** All project areas that are barren or unsuitable for tortoises but occur adjacent to creosote-bursage or Mojave mixed scrub vegetation, will be cleared by an authorized biologist before the start of maintenance or modification using 100-percent coverage survey techniques no more than 3 days before the initiation of construction. Areas within blackbrush will be cleared only if reconnaissance surveys reveal tortoise sign within the project area.

27. **On-site biologist:** Unless the project area has been fenced and cleared; a survey has been conducted and determined that no tortoises or active burrows are within 1,000 feet of the project area; or the Service and BLM have determined an onsite biologist is not necessary, the project will require an authorized biologist(s) onsite for project construction during the period of greatest tortoise activity (e.g., March 1 through October 31), and on-call at other times..

Proposed Measures for Wildlife Management Activities:

28. **Vehicles, access:** All vehicle use in desert tortoise habitat for these actions shall be restricted to existing roads, trails, large sandy washes, and ways. No new access roads shall be created.

29. **Disturbance:** Activities that involve ground disturbance, such as installation of water sources, fences, or other infrastructure shall comply with the proposed measures for ground disturbing actions.

LITERATURE CITED

- Nussear, K.E., Esque, T.C., Inman, R.D., Gass, Leila, Thomas, K.A., Wallace, C.S.A., Blainey, J.B., Miller, D.M., and Webb, R.H. 2009. Modeling habitat of the desert tortoise (*Gopherus agassizii*) in the Mojave and parts of the Sonoran Deserts of California, Nevada, Utah, and Arizona: U.S. Geological Survey Open-File Report 2009-1102. 18 pp.
- Service (Fish and Wildlife Service). 2009. Desert Tortoise (Mojave Population) Field Manual:(*Gopherus agassizii*). Region 8, Sacramento, California.
- U.S. Geological Survey (USGS). 2005. National Gap Analysis Program. Southwest Regional GAP Analysis Project-Land Cover Descriptions. RS/GIS Laboratory, College of Natural Resources, Utah State University.

----- This page intentionally left blank -----